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*J. E. Church Jr.
Revision Copy*

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TENTH ANNUAL REGISTER

OF THE

NEVADA

STATE UNIVERSITY

FOR THE YEAR 1904-5

WITH

ANNOUNCEMENTS FOR THE
ACADEMIC YEAR OF 1905-1906

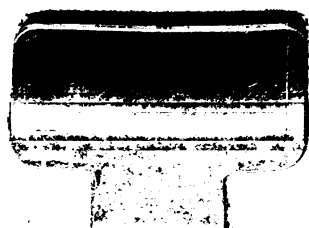


CARSON CITY, NEVADA

STATE PRINTING OFFICE

ANDREW MAULE, SUPERINTENDENT

1905



SEVENTEENTH ANNUAL REGISTER
OF THE
NEVADA
STATE UNIVERSITY
FOR THE YEAR 1904-5

WITH
ANNOUNCEMENTS FOR THE
ACADEMIC YEAR OF 1905-1906



CARSON CITY, NEVADA
STATE PRINTING OFFICE : : ANDREW MAUTE, SUPERINTENDENT
1905



SEVENTEENTH ANNUAL REGISTER.

OFFICE OF THE
BOARD OF REGENTS OF THE STATE UNIVERSITY,
RENO, NEVADA, May 1, 1905.

To His Excellency, JOHN SPARKS, Governor of the State of Nevada.

SIR: The Regents of the State University have the honor to submit herewith the Annual Register of the University for the year 1904-1905, containing the courses of study, general information, the membership of the Faculty, and the enrollment of the students, as required by the Act of the Legislature approved March 6, 1901.

By the Board of Regents: OSCAR J. SMITH, Chairman.
GEORGE H. TAYLOR, Secretary.

*Place in
here of Register.*

MILITARY ESTABLISHMENT

SEPTEMBER, 1904—JUNE, 1905.

Commandant of Cadets:

Captain CHARLES T. BOYD, 10th Cavalry, U. S. Army.

BATTALION ORGANIZATION.

For instruction in Infantry Tactics and in military police and discipline, the Cadets are organized into a battalion of two companies and band. The officers and non-commissioned officers are selected from those Cadets who have been most studious, soldier-like in the performance of their duties, and most exemplary in their general deportment. The Officers are taken from the Senior class; the Sergeants from the Junior class; and the Corporals from the Sophomore class.

Major:

CASSIUS C. SMITH.

Co. A.

C. W. STARK¹

Captains:

Co. B.

W. J. POPE²

First Lieutenants:

JAMES NESBITT,¹ Battalion Adjutant.

C. L. SMITH²

H. C. CHISM³

H. S. PALMER,⁴ Signal Corps.

Sergeant Major:

LESLIE E. ELLIOTT.¹

First Sergeants:

LLOYD D. SKINNER²

B. G. McBRIDE³

Quartermaster Sergeants:

C. C. TAYLOR⁴

H. L. JONES⁵

Drum Major:

WILSON McMANAMAN.¹¹

Sergeants:

H. H. CAZIER⁶

A. S. HAMLIN⁷

J. D. SCOTT⁸

W. J. O'BRIEN⁹

E. C. COMERFORD¹⁰

Band Sergeants:

G. E. HOFFMANN,¹²

C. D. JAMESON,¹³

D. H. UPDIKE.¹⁴

The figures indicate relative rank.

Military Establishment.

7

Corporals:

R. W. SAWYER ¹	JAMES HART ²
J. A. CHAMPAGNE ³	A. M. BOYLE ⁴
A. C. CURRAN ⁵	F. B. STEWART ⁶
E. W. HARRINGTON ⁰	J. D. LEAVITT ⁷
	C. A. HART ⁸

The figures indicate relative rank.

ASSOCIATION OF UNIVERSITY ALUMNI.

President.....M. MAUDE WHEELER, '96
 Vice-President FENTON A. BONHAM, '01
 Secretary-Treasurer KATE RIEGELHUTH, '97

EXECUTIVE COMMITTEE.

KATE RIEGELHUTH, '97, AIMEE SHERMAN, '99.

ASSOCIATION OF NORMAL ALUMNI.

President.....Mrs. LILLIAN DOUGLAS SAMPLE, '96
 Vice-Presidents.....Presidents of each class
 Secretary.....Miss ETHEL MAY PECKHAM, '00
 Corresponding Secretary Miss SARAH CHASE, '04
 Treasurer Miss FRANCES WRIGHT, '04

UNIVERSITY SCHOLARSHIPS AND PRIZES.

THE REGENTS' SCHOLARSHIP of seventy-five dollars, given by Regents EVANS, BOOHER, and KIRMAN, was awarded to the Junior Class of 1903-4 for the highest average scholarship.

A scholarship of fifty dollars, given by J. B. O'SULLIVAN, was awarded to ALFRED S. HAMLIN for general merit.

THE CHENEY TROPHY was awarded to the ALPHA BETA LITERARY SOCIETY.

107th

UNIVERSITY ADDRESSES.

Annual Commencement Address, Thursday, June 2, 1904, by Professor CARL C. PLEHN, Dean of the College of Commerce of the University of California.
Subject: "Education for Commerce as a Profession."

Annual Baccalaureate Sermon, Sunday, May 29, 1904, by President JOSEPH EDWARD STUBBS, D.D. Subject: "The Genuine Culture of Life."

TRI-DECENNIAL CELEBRATION—JUNE 1, 1904.

Address of Welcome. Mayor GEO. F. TURBITTIN of Reno.

A Greeting from the Pioneers. The Honorable CRANSTON ALLEN, oldest surviving member of the Legislature of 1873, Fallon, Nevada.

The University's First President, Le Roy D. Brown: a Tribute from His Son. THOMAS P. BROWN, of Santa Monica, California.

The Spirit of the Pioneers: By One of Them. Professor Emeritus HANNAH K. CLAPP, Palo Alto, California.

The University and the State. Judge G. F. TALBOT, Associate Justice of the Supreme Court, Carson City, Nevada.

The University and the National Government. Senator FRANCIS G. NEWLANDS, Washington, D. C.

The Departed University Pioneers. R. L. FULTON, Reno, Nevada.

The Departed Alumni and Students. E. E. CAINE, Elko, Nevada.

GENERAL ASSEMBLY.

President STUBBS: "The Ballot; Its Privileges, Its Duties, Its Responsibilities." "The College and the State." "If I Were a College Boy." "Privileges and Opportunities of the University." "If I Were a College Girl."

Dean HENRY THURTELL: "Athletics and College Spirit." "Football." "The Truckee-Carson Irrigation Canal."

Professor G. F. BLESSING: "Athletics and College Spirit." "Mechanical Engineering."

Mr. SINGLETON CHARNOCK: "Washington."

Mr. JOHN W. WRIGHT: "Athletics and College Spirit."

Professor ROBERT LEWERS: "Football." "Address of Welcome."

Regents BOOHER, BRAY, KIRMAN, STARRETT, and TAYLOR: Remarks.

Father T. M. TUBMAN: "Address of Welcome."

Regent OSCAR J. SMITH: "The Wearing of the Uniform as a Compulsory Measure."

Dr. L. W. CUSHMAN: "On the Play of 'Everyman.'"

Senators ODDIE and O'KANE: Remarks.

Assemblymen WRIGHT, DODGE, and WILLIAMS: Remarks.

Professor JEANNE ELIZABETH WIER: "The Goal of the Golden West."

- Mr. GEORGE S. NICKERSON, Civil Engineer: "Crater Lake."
Dr. P. B. KENNEDY: "Campus Improvement."
Professor PETER FRANDSEN: "Biology."
Dr. H. E. FRANCK: "Ethics of Gambling."
Captain C. T. BOYD: "The Troops of General Ma."
Professor S. B. DOTEN: "Student Standards."
Mr. DANIEL M. McDONALD: "Yellow Journalism."
Mr. LOUIS GOLDSTEIN: "Talleyrand at the Congress of Vienna."
Mr. JOHN D. SCOTT: "Benedict Arnold."
Professor GEORGE J. YOUNG: "Three Great Inventions."
Professor J. G. SCRUGHAM: "The Longest Power Transmission in the World."
Mrs. LETITIA WHITE OWEN: "Life on the Rail and People We Meet."
Professor N. E. WILSON: "What the University Stands For." "The Development of Chemical Science." "Address of Welcome."
Professor J. A. REID: "Address of Welcome."
Professor LAURA DE LAGUNA: "Address of Welcome."
The Reverend SAMUEL UNSWORTH: "Address of Welcome."
Major HILTON: "Whom We Know."
The Honorable WILLIAM JENNINGS BRYAN: "Debating and Ideals."

OFFICIAL ORGANIZATION.

The University comprises five main departments, as follows:

THE COLLEGES OF AGRICULTURE AND MECHANIC ARTS.

THE COLLEGE OF AGRICULTURE AND DOMESTIC SCIENCE.

THE COLLEGE OF ENGINEERING.

THE COLLEGE OF ARTS AND SCIENCE.

THE NORMAL SCHOOL.

THE AGRICULTURAL EXPERIMENT STATION.

THE HIGH SCHOOLS.

The Regents of the University and the Board of Control of the Experiment Station are elected, two every four years and one every two years.

THE REGENTS OF THE UNIVERSITY.

The Hon. OSCAR J. SMITH (1905-1909), Chairman.....	Reno
The Hon. W. W. BOOHER (1903-1907).....	Elko
The Hon. HENRY S. STARRETT (1905-1907).....	Battle Mountain
Mr. GEORGE H. TAYLOR, Secretary.....	Reno

THE BOARD OF CONTROL OF THE AGRICULTURAL EXPERIMENT STATION.

The Hon. OSCAR J. SMITH (1905-1909), Chairman.....	Reno
The Hon. W. W. BOOHER (1903-1907).....	Elko
The Hon. HENRY S. STARRETT (1905-1907).....	Battle Mountain
Mr. GEORGE H. TAYLOR, Secretary.....	Reno

THE HONORARY BOARD OF VISITORS.

The Hon. A. L. FITZGERALD, Chairman.....	Carson City, Ormsby County
The Hon. J. W. FREEMAN.....	Stillwater, Churchill County
The Hon. D. W. VIRGIN.....	Genoa, Douglas County
The Hon. E. S. FARRINGTON.....	Elko, Elko County
The Hon. W. J. HENLEY.....	Hawthorne, Esmeralda County
The Hon. MOSES REINHART.....	Winnemucca, Humboldt County
The Hon. W. C. GAYHART.....	Austin, Lander County
The Hon. A. S. THOMPSON.....	Pioche, Lincoln County
The Hon. J. E. GIGNOUX.....	Dayton, Lyon County
The Hon. ANDREW MAUTE.....	Carson City, for Nye County
The Hon. J. D. TORREYSON.....	Carson City, Ormsby County
The Hon. M. R. AVERILL.....	Virginia City, Storey County
The Hon. W. L. COX.....	Reno, Washoe County
The Hon. SOL HILP.....	Ely, White Pine County
The Hon. BERT L. SMITH.....	Eureka, Eureka County

EXCERPT FROM THE STATUTE CREATING THE HONORARY BOARD OF VISITORS.

*Compiled Laws of 1900, Sections 1406-1410.**Governor to Appoint Members.*

1407. SEC. 2. The Governor shall appoint and commission, within forty days after the passage of this Act, from each county, one suitable and discreet person who is interested in higher education, and who is an actual resident of said county, as a member of said Board.

Duties of Board.

1408. SEC. 3. It shall be the duty of said Board of Visitors to meet annually at the seat of the Nevada State University during Commencement week, and inspect the grounds, buildings and equipment of said University, and also inquire into the actual state of the discipline, instruction, police administration and other affairs or concerns of the University. The Board of Visitors shall report thereon to the Governor, within thirty days after each annual meeting, for the information of the people of the State and of the next succeeding Legislature of the State, their action as such visitors, with their views and recommendations concerning the University, such as they shall deem wise and just and for the best interests of the University.

Notice to Honorary Board of Visitors.

1409. SEC. 4. The President of the University shall cause at least thirty days' notice to be given to the members of the Honorary Board of Visitors of the time and place of their annual meeting.

Expenses of Members.

1410. SEC. 5. No compensation shall be made to the members of said Board of Visitors for their services or for their traveling expenses, but the Board of Regents shall pay out of the University Contingent Fund their expenses for board and lodging while at the University.

FACULTY.
OFFICERS OF INSTRUCTION.

JOSEPH EDWARD STUBBS,

President of the University, Professor of Law and Greek.

B.A., Ohio Wesleyan University, 1873; M.A., 1876; Honorary D.D., German Wallace College, 1890; Instructor Greek and Latin, Ohio Wesleyan University, 1872-75; Superintendent of Schools, Ashland, Ohio, 1880-1886; President Baldwin University, Ohio, 1886-94; President Ohio College Association, 1891-2; President Association of American Agricultural Colleges and Experiment Stations, 1899-1900.

HENRY THURTELL,¹

Dean of the Faculty, Professor of Mathematics and Mechanics.

B.Sc., Michigan Agricultural College, 1888.

ROBERT LEWERS,

Registrar, Professor of Political Economy and Principal of the Commercial School.

NATHANIEL ESTES WILSON,

Vice-Director of the Experiment Station, Professor of Chemistry and Dairying.

B.Sc., Maine State College, 1888; M.Sc., Maine State College, 1893.

THOMAS W. COWGILL,

Emeritus Professor of English Language and Literature.

B.A., Harvard University, 1883; M.A., Vanderbilt University, 1888.

JAMES EDWARD CHURCH, JR.,

Professor of the Latin Language and Literature.

B.A., University of Michigan, 1892; Ph.D., University of Munich, 1901.

LAURA DE LAGUNA,

Associate Professor of the Modern Languages.

B.A., Leland Stanford Junior University, 1894.

ANNA HENRIETTA MARTIN,²

Lecturer in History of Art.

B.A., Nevada State University, 1894; B.A., Leland Stanford Junior University, 1896; M.A., Leland Stanford Junior University, 1897.

JEANNE ELIZABETH WIER,

Associate Professor of History.

B.Di., Iowa State Normal School, 1893; B.A., Leland Stanford Junior University, 1901.

¹Will be absent on leave 1905-6.

²Absent on leave in Europe.

*Seventeenth Annual Register.*GEORGE FREDERICK BLESSING,¹

Professor of Mechanical Engineering.

B.M.E., Kentucky State College, 1897; M.E., Kentucky State College, 1904.

LYSANDER WILLIAM CUSHMAN,

Professor of the English Language and Literature.

*B.A., Pierce Christian College, 1883; B.A., Harvard University, 1886; M.A., Drake University, 1890; Ph.D., Göttingen, 1900.*GEORGE DAVIS LOUDERBACK,²

Professor of Geology and Mineralogy.

B.A., University of California, 1896; Ph.D., University of California, 1899.

PATRICK BEVERIDGE KENNEDY,

Professor of Botany and Horticulture.

B.S.A., University of Toronto, 1894; Ph.D., Cornell, 1899.

PETER FRANDSEN,

Professor of Zoölogy and Bacteriology.

B.A., Nevada State University, 1894; B.A., Harvard University, 1899; M.A., Harvard University, 1899.

GEORGE J. YOUNG,

Professor of Mining and Metallurgy.

B.S., University of California, 1899.

MILDRED MAUDE WHEELER,

Instructor in German, Greek, and Mathematics.

B.A., Nevada State University, 1896; M.A., University of California, 1898.

SAMUEL BRADFORD DOTEN,

Principal of the High School, Assistant Professor of Mathematics
and Entomology.*B.A., Nevada State University, 1898.*

KATE BARDENWERPER,

Instructor in Domestic Arts and Science.

*Armour Institute of Technology, 1900.*CHARLES T. BOYD,³

Professor of Military Science and Tactics.

U. S. Military Academy, West Point, 1896; Captain, 10th Cavalry, U. S. Army; Major, 37th Infantry, U. S. Volunteers.

ROMANZO ADAMS,

Dean of the Normal School, Professor of Education and Sociology.

*B.Di., Iowa State Normal School, 1891; M.Di., Iowa State Normal School, 1892; Ph.B., University of Michigan, 1897; Ph.M., University of Michigan, 1898; Ph.D., University of Chicago, 1904.*¹Will be absent on leave 1905-6.²Absent on leave in California as Carnegie Fellow in Geology.³Absent on leave in China, 1st semester, 1904-5; assigned to service as Major, 4th Battalion, Philippine Scouts, April, 1905.

GORDON H. TRUE,
Professor of Agriculture and Animal Husbandry.
B.S., University of Wisconsin, 1894.

BERNARD ALFRED ETCHEVERRY,
Associate Professor of Civil Engineering and Physics.
B.S., University of California, 1902.

JAMES GRAVES SCRUGHAM,
Assistant Professor of Mechanical Engineering.
B.M.E., Kentucky State College, 1900.

JOHN ALLEN REID,
Acting Professor of Geology and Mineralogy.
B.S., University of California, 1900.

IRVIN WILSON AYRES,¹
Instructor in Public Speaking, Librarian.
B.A., Nevada State University, 1901; M.A., University of Virginia, 1903.

FRANCES ELIZABETH SHORT,
Assistant Professor of Education, Mistress of Manzanita Hall.
San José State Normal School, 1888; B.A., Leland Stanford, Junior, University, 1892.

WILLIAM BRYANT THOMPSON,²
Instructor in Mechanical Engineering.
B.S.M.E., Nevada State University, 1904.

ROBERT MAURO BRAMBILA,
Professor of Military Science and Tactics.
B.S.A., Nevada State University, 1897; Captain 27th Infantry, U. S. Army.

MRS. ALICE L. LAYTON,
Instructor in Vocal Music.
Graduate New England Conservatory of Music.

KATHERINE LEWERS,
Instructor in Freehand Drawing.
Studied with Howard Helmie, Washington, D. C., 1897-9, and in New York School of Applied Design, 1899-1902.

CHARLES R. FITZMAURICE,
Assistant in Chemical Laboratory.

LOTTA SYBIL HOWE,
Student Assistant in English.
B.Lit., Mills College, 1902.

¹Resigned as Librarian, resignation to take effect August 31, 1905.

²Resigned, 1905.

Seventeenth Annual Register.

ADA E. MORSE,
Student Assistant in Latin.

MARGARET ESTELLE MAYBERRY,
Student Assistant in Latin.

MARY E. BACON,
Student Assistant in Latin.

EMILY BERRY,
Student Assistant in English.

WILLIAM JAMES O'NEILL,
Student Assistant in Mechanical Engineering.

ABRAM H. STECKLE,
Student Assistant in Mechanical Engineering.

OFFICERS OF ADMINISTRATION.

J. E. STUBBS <i>A.B., M.A.</i>	President of University; Director of Experiment Station
RICHARD BROWN	Superintendent of Buildings and Grounds
HENRY THURTELL ¹ <i>A.B.</i>	Dean
ROBERT LEWERS	Registrar and Principal of the Commercial School
NATHANIEL ESTES WILSON <i>B.S., M.S.</i>	Vice-Director of the Experiment Station
ROMANZO ADAMS <i>P.A.D.</i>	Dean of the Normal School
SAMUEL BRADFORD DOTEN <i>B.A.</i>	Principal of the High School
IRVIN W. AYRES <i>M.A.</i>	Librarian
FRANCES E. SHORT	Mistress of Manzanita Hall
ALBERT J. CATON ² <i>B.A.</i>	Office Secretary
CAROLYN M. BECKWITH	Office Secretary
Mrs. T. W. COWGILL <i>B.A., M.A.</i>	Librarian of Experiment Station
Mrs. DELIA ELKINS	Matron of University Hospital

FACULTY ORGANIZATION.

Chairman	PRESIDENT OF THE UNIVERSITY
Vice-Chairman	Dean HENRY THURTELL
Secretary	Professor ROBERT LEWERS

STANDING COMMITTEES OF THE FACULTY.

The individual members of the committee have no authority outside of committee.

The President of the University is *ex officio* a member of all Standing Committees.

I. ON STUDENT AFFAIRS—Dean Thurtell, Professors Lewers, Wilson, Church, Young, and Superintendent Brown.

II. ON ADMISSION AND ACCREDITING OF SCHOOLS—Professors Church, Cushman, Wier, Adams, and Doten.

III. ON CONDITIONS AND REEXAMINATIONS—Professors Young, Kennedy, and Etcheverry.

IV. ON DEBATING AND LITERARY SOCIETIES—Professors Cushman, Frandsen, and Librarian Ayres.

V. ON ATHLETICS—Professors Wilson, Blessing, and Kennedy.

VI. ON THESES AND COURSES OF STUDY—Professors Louderback, Reid, and Etcheverry.

¹Will be absent on leave 1905-6.

²Resigned November 8, 1904.

- VII. ON LIBRARY—Professors Church, Wier, and Librarian Ayres.
 VIII. ON UNIVERSITY PUBLICATIONS—Professors Adams, True, and Librarian Ayres.
 IX. ON GRADUATION AND HONORS—The Faculty.
 X. ON MILITARY AFFAIRS—Captain Boyd.
 XI. ON SCHEDULES—Professor Lewers.
 XII. ON GROUNDS—Superintendent Brown, Professors Reid, True, and Kennedy.
 XIII. ON GROUP ELECTIVES—Professors Frandsen, de Laguna, and Reid.
 XIV. ON MANZANITA HALL—Miss Short, Miss Bardenwerper.
 XV. ON LINCOLN HALL—Superintendent Brown, Professor True.
 XVI. ON CLASSIFICATION—The Faculty, as follows:
 Dean Thurtell, Chairman.
 Freshman L. A. and G. S., Sophomore L. A. and G. S.—Professor Church.
 Junior and Senior L. A. and G. S.—Professors Frandsen, de Laguna, and Reid.
 All Students in Agriculture—Professor True.
 All Normal Students—Professor Adams.
 All Freshman Engineering—Assistant Professor Scrugham.
 All Sophomore Engineering and Junior and Senior C. E.—Associate Professor Etcheverry.
 All Junior and Senior Mines—Professor Young.
 All Junior and Senior M. E.—Professor Blessing.
 All Special Students—Professor Wilson.
 All First High School—Miss Short.
 All Second High School—Miss Bardenwerper.
 All Third High School—Miss Wheeler.

LLD.**STATION STAFF.**

J. E. STUBBS, Director	Publication
NATHANIEL E. WILSON, M.Sc., Vice-Director	Chemistry and Dairying
P. BEVERIDGE KENNEDY, Ph.D.	Botany, Horticulture and Forestry
PETER FRANDSEN, M.A.	Zoölogy and Bacteriology
SAMUEL B. DOTEN, B.A.	Entomology and Meteorology
GORDON H. TRUE, B.S.	Agriculture and Animal Husbandry
THEODORE W. CLARK	Superintendent of Farm
Mrs. T. W. COWGILL M.A.	Librarian
CAROLYN M. BECKWITH	Stenographer

Rearrange

ORGANIZATION, EQUIPMENT, AND ADMINISTRATION.

FOUNDATION.

The Nevada State University is the head of the educational system of the State of Nevada. It is the only institution of university or college grade and equipment within the State. The Constitution of Nevada declares that "the Legislature shall encourage, by all suitable means, the promotion of intellectual, literary, scientific, mining, mechanical, agricultural and moral improvement," and shall provide for "the establishment of a State University which shall embrace departments for agriculture, mechanic arts and mining." The University was first located at Elko by a law approved March 7, 1873, but was removed to Reno by an Act of the Legislature approved March 7, 1885, and was formally reopened March 31, 1886. Only a preparatory school was maintained at Elko. The University proper begins with the academic year 1886-7.

The State Normal School was authorized by an Act of the Legislature, approved February 7, 1887, and was established and opened for students in September, 1887.

FUNDS.

The endowments and appropriation on which the University has been founded and maintained are the following:

1. Donation of 21.15 acres of land by the Central Pacific Railroad and erection of a building in 1873-4 by the citizens of Elko at a cost of more than eighteen thousand dollars.

2. Removed to Reno by an Act of the Legislature approved by the Governor March 7, 1885. The Board of County Commissioners of Washoe County paid to Elko County \$20,000 and to the Board of Regents \$5,000 to be expended in purchasing a site at Reno and beginning the construction of a building thereon.

3. The fund derived from the Congressional Land Grant of July 2, 1862, the interest of which is included in the biennial appropriation.

4. Various appropriations by the State Legislature for buildings and other specified purposes.

5. The biennial appropriation by the State Legislature for the support of the University.

6. The Agricultural Experiment Station Fund *for research only* of \$15,000 a year.

7. The Morrill College Fund in support of the Agricultural and Mechanical College, yielding the present year the sum of \$25,000.

8. The gift of the farm to the University by the citizens of Washoe County for the benefit of the Agricultural Experiment Station. This farm consists of 60 acres of good land near the University and 90 inches of water annually. It cost the county the sum of \$12,000.

COLLEGES AND SCHOOLS.

The organization of the University comprises the following Colleges and Schools which aim to meet the best ideas and ideals of modern University life and training:

I. THE COLLEGE OF ARTS AND SCIENCE:

1. The School of Liberal Arts.
2. The School of General Science.

II. THE COLLEGE OF AGRICULTURE:

1. The School of Agriculture.
2. The School of Domestic Arts and Science.

III. THE COLLEGE OF ENGINEERING:

1. The School of Mining Engineering.
2. The School of Mechanical Engineering.
3. The School of Civil Engineering.

IV. THE STATE NORMAL SCHOOL.

V. THE UNIVERSITY HIGH SCHOOLS.

ADVANTAGES OF SITUATION.

Reno, the seat of the University, is a thriving town of ten thousand inhabitants, situated in the beautiful Truckee valley, and at the junction of three railroads, namely, the Southern Pacific railway, a trunk line between the East and the West; the Virginia and Truckee railway, and the Nevada-California-Oregon railway. The noble mountains which encircle the valley, the pure air and soft sunshine give the town an enviable reputation for health and beauty. Excellent public schools, churches of all the leading denominations, both Catholic and Protestant, a moral and cultured community offer here the proper conditions for the prosperity and development of university life and work. Furthermore, the proximity of Reno to the famous Comstock Lode and the other mines of western Nevada and eastern California enables the College of Mining Engineering to offer a large amount of practical training and experience in mining operations.

BUILDINGS AND GROUNDS.

The University Campus has an area of thirty-eight acres, and is beautifully located on an eminence overlooking the city. There are eleven buildings now in use, and two in course of construction.

MORRILL HALL.

Morrill Hall is a three-story brick building with a large basement. The offices of the President and administration of the University and the Physical Laboratory occupy the first floor, the Library occupies the entire basement story, class rooms of Ancient Languages and History occupy the second floor, while the third floor is given to the use of the University Commercial School and the Drawing Department of the School of Mechanical Engineering.

STEWART HALL.

Stewart Hall is also a three-story and basement structure. The first floor is occupied by class rooms for Education, Modern Languages, and Mathe-

matics. Upon the second floor are lecture rooms for English and Mathematics, and the third floor is devoted to the School of Domestic Arts and Science. The basement is in use for the present as a dining hall.

HATCH STATION.

Hatch Station, formerly occupied by the Department of Mining and Metallurgy, has been set aside for the use of the Experiment Station, which is supported by the General Government for the purpose of original investigation in the various subjects related to scientific and practical agriculture. The first floor of Hatch Station is occupied by the Departments of Agriculture, Botany and Horticulture. The second floor is given to the Departments of Zoölogy and Bacteriology; and the third floor is occupied by the Departments of Entomology and Meteorology and by the Station Photographic Laboratory.

MINING BUILDING.

The first floor of the Mining Building is occupied by the Departments of Civil Engineering and Geology. The second floor contains one lecture room, the Metallurgical Laboratory and the Mineralogical Laboratory. The Assay Office occupies temporary quarters in another building. A Metallurgical Laboratory, of large dimensions and fully equipped, is now under construction.

MECHANICAL BUILDING.

The workshop is a brick building of superior design. The ground floor is applied to the use of the machine shop, the blacksmith shop, and the boiler room. The wood shop occupies the second floor, and is fitted up with one power jig saw, one band saw, one universal wood working machine, four wood lathes, one universal trimmer, one grindstone. There are twenty-four benches and an equal number of lockers. Each locker contains the following tools:

One rip saw, one crosscut saw, one hack saw, one bench saw, one set Bailey's planes, one set of chisels, one oil stone, one scratch awl, one steel square, one bevel, one two-foot rule, one pair of dividers, one hammer, one mallet, one marking gage, one drawing knife, one set of awls, one set of screw-drivers, one nail set, two try squares, and one broad hatchet. The tool room is provided with every needed variety of wood-working tools. The machine shop is furnished with one tool-room lathe, two screw-cutting lathes, one polishing lathe, one shaper, one universal milling machine, one universal cutter grinder, five bench vises, one wet emery wheel, one dry emery wheel, one alternating current dynamo, one direct current dynamo, and a tool room equipped with small machine tools and certain experimental apparatus for the use of mechanical engineering students. The blacksmith shop has forges and the necessary tools.

CHEMISTRY BUILDING.

A commodious stone building, 90 feet by 45 feet, with a rear wing 50 feet by 20 feet, is the home of the Chemical Department both of the University and the Experiment Station. On the first floor is located the laboratory for qualitative analysis and general chemistry, accommodating sixty-five students; the laboratory for quantitative analysis, accommodating thirty-six students, together with the necessary stockrooms, balance rooms and labora-

tory for special work, are also on this floor. On the second floor is a lecture room, the Experiment Station Laboratory, a large stockroom, a room for preparing apparatus for demonstration of experiments before classes, the office of the Chemical Department, and a suite of rooms which will be furnished for an organic laboratory. In the basement is a large acid and chemical room and the boiler room. The building is lighted by electricity.

LINCOLN HALL.

The State Legislature, recognizing the importance of placing the benefits of the University within the reach of all the deserving young men and women of the State, authorized the building of two Student Halls, after the plan of such halls in use by students of the larger Eastern colleges, and appropriated thirty-five thousand dollars for the purpose. The first of these two buildings is known as "Lincoln Hall," and is a tasteful and comfortable home for one hundred young men. The plans of Lincoln Hall were drawn after a careful study of the best modern college halls, and seem to meet every requirement of a cultivated taste.

MANZANITA HALL.

The second building, known as "Manzanita Hall," is a delightful home for young women. It is located upon the plaza in the southwest part of the Campus, and overlooks the town and the valley. The construction material is brick and granite. The architectural features are those of a commodious private dwelling. Besides the single and double rooms, which are sufficient for forty young women, there is a reading room and a parlor for the students and a private parlor and sitting room for the Mistress of Manzanita Hall.

THE GYMNASIUM.

The Gymnasium is a modern structure 60 feet wide and 120 feet long. It is equipped both as an armory for the use of the military department and as a gymnasium for athletic training. The equipment is modern and ample for all college purposes. Convenient toilet rooms with hot and cold water and lockers for the use of all students are provided. The gymnasium, on account of its convenience and size, is also used as an assembly hall for General Assembly and the more important University functions.

THE PRESIDENT'S HOUSE.

The home of the President is situated on the southeast corner of the Campus. It is colonial in the general style of its architecture and is a fine, commodious home, an ornament to the University as well as a suitable residence. It was built at a cost of \$9,418.70. The ground on which the house is built was leased by the Regents of the University, but when the Legislature appropriates the money to pay for the cost of building, the house becomes the property of the University.

THE HOSPITAL.

Between the Gymnasium and Lincoln Hall is situated the University Hospital. This is a one-story brick building and contains six rooms. Entrance is from a southern portico into a reception hall, which is for the use of convalescents. There are four wards—two upon the west for young men and two upon the east for young women. There is a convenient kitchen where

the food for the patients is prepared. This building was given by the Legislature of 1901, at a cost of \$3,500. It has provided for eighty-seven patients since its opening in September, 1902. Students are well cared for by a competent nurse and may have any physician which they or their parents prefer.

EVANS' FIELD.

The beauty and convenience of the Campus has in recent years been greatly enhanced through the leasing to the University by the late Regent Evans of a plot of ground adjoining the Campus on the north. This plot of ground, named Evans' Field in honor of the leaser, is a natural stadium, such as was used at the ancient Olympian games, and on account of its seats of turf could be made an ideal athletic field at a trifling expense.

LIBRARY AND LABORATORIES.

THE LIBRARY.

The Library, consisting of stackroom, office, and reading room, contains ten thousand bound volumes, and several thousand pamphlets. The books have been selected with particular reference to the needs of the several departments of study; but, besides the works needed by special departments, there are many general works, such as dictionaries, encyclopedias, atlases, and other reference works of various kinds. The books are catalogued according to the Dewey Decimal Classification System, and a complete card catalogue renders the finding of any desired book easy and quick. The reading room is supplied with daily and weekly papers, and with many of the best scientific and literary periodicals. The Library is open from 8 a. m. to 4:35 p. m. on lecture days, and from 8 a. m. to 12 m. on Saturdays. Special provision is made for students doing thesis work. The general public is extended the use of the Library under such restrictions of the time for which a book may be withdrawn as are necessary to prevent interference with the work of the students.

THE LABORATORIES.

The University aims to make its science work valuable by developing as far as possible well-equipped laboratories in each subject offered.

Quantitative Laboratory—Equipped with gas, water, fume closets, steam closets, steam evaporators, drying ovens, etc. In connection with this is a balance room containing six sets of balances, as well as a special laboratory for the analysis of water and for such determinations as cannot be made in the main laboratory.

The *Qualitative Laboratory* will accommodate sixty-five students, each one being provided with a locker and drawer for keeping apparatus. The laboratory is completely fitted with water, gas, and fume closets.

In the *Experiment Station Laboratory* those students who are interested in agricultural work have an opportunity to pursue this work according to the methods adopted by the Association of American Agricultural Chemists.

Biological Laboratory—This laboratory is used for the elementary courses in Botany and Zoölogy. They are equipped with dissecting tables, trays, sinks, compound microscopes, dissecting microscopes, microtomes, mounting material, chemicals, balances, etc.

The *Histological and Bacteriological Laboratories* are furnished with modern apparatus, such as incubators, steam sterilizers, hot-air sterilizers, serum inspissators, microscopes, etc. There are also the beginnings of an ornithological collection now being made by the Experiment Station, which will be used for illustrative purposes in the courses in Zoölogy.

Entomological Laboratory—This laboratory has been recently equipped for entomological research. It contains also the photographic laboratory of the Experiment Station.

The *Geological and Mineralogical Laboratory* has good collections of minerals, rocks, and fossils arranged for study. Courses are offered in the physical and blow-pipe determination of minerals, the determination of rocks and fossils by observational study, and the preparation of thin sections and microscopical study of rocks.

Assaying and Metallurgical Laboratories—These laboratories are at present occupying temporary quarters in the Mining and Mechanical Buildings.

Physical Laboratory—This laboratory is equipped with sufficient apparatus to permit a thorough course in High School, Freshman, and Sophomore Physics.

SCIENTIFIC COLLECTIONS.

The Departments of Botany, Zoölogy, Entomology, Geology, and Mineralogy are continually adding scientific material to their collections, but at present no suitable arrangements can be made for their proper disposal and exhibit, the room not being available. Three cases illustrating the minerals and rocks of Eastern and Western Nevada and other mining States respectively are set up in the Mining Building. As soon as the opportunity offers the University expects to arrange and exhibit its collections so that they may be available to students and visitors.

AFFILIATED ORGANIZATIONS.

THE AGRICULTURAL EXPERIMENT STATION.

The Agricultural Experiment Station was organized in December, 1887, under the provisions of the "Hatch Act," approved March 2, 1887, whereby the General Government appropriated \$15,000 annually for the support of an Agricultural Experiment Station in each State and Territory of the Union.

The primary object of the Station is the promotion of agriculture along scientific lines by conducting researches on the physiology of plants and animals; the diseases to which they are subject, with remedies for the same; the chemical composition of useful plants at different stages of growth; crop rotation; acclimatization of trees and plants; analysis of soils and waters; chemical composition of manures and fertilizers, with experiments to test their effects on crops; the composition and digestibility of foods for domestic animals; the production of beef, mutton, pork, milk, butter, and cheese through improved strains and intelligent feeding; the proper use of water in irrigation; the reclamation of alkali lands and the prevention of the rise of alkali; entomology, especially in its economic relation to agriculture; in fact, the solving of all problems pertaining to agriculture which are or may be of importance to this State.

The results of the work of the Station are made public through quarterly bulletins and reports which are sent free to all residents of the State who desire them.

THE STATE MINING LABORATORY.

Under an Act passed by the State Legislature, March 16, 1895, citizens of the State of Nevada may send ores and minerals to the State University and have the same analyzed and assayed without cost. (Secs. 1402-1405, incl., Compiled Laws of Nevada.) The attention of the public is called to the fact that the law expressly states that only citizens of the State of Nevada may so send ores and minerals and that the same must have been taken "from within the boundaries of the State of Nevada." This provision is observed in so far as is practicable. Where persons are known not to be citizens, or the material comes from without the confines of the State, such material is not examined, but is held subject to the wishes of the sender.

The law further provides that the result of the analysis shall be sent to said citizen together "with as near as possible an explanation of their (ores and minerals) uses and value in market, and there shall be kept at the State University a book of record, open for inspection, under such rules as may be made by the Regents, of all minerals, ores or other matters sent, together with the history of such minerals and other matters, stating the name of the person or persons from whom received, the district and county from which it came and all other matters that may be beneficial touching the same."

In compliance with the above section reports have been rendered, and a record book kept. In order to make reports as accurate as possible, it is suggested that citizens supply all information, as indicated in the above extract, that may have any influence in determining the value of an ore or mineral. Lack of sufficient data necessitates almost always general statements concerning value.

In respect to the analytical and assaying work, the Department of Mining, which has been assigned this work by the President of the University, has adopted the following: Specimens and samples are first carefully examined, and, if a quantitative analysis is necessary to determine the value, the same is made. In all cases where the results of a preliminary examination are doubtful, a quantitative analysis is made. No quantitative work is done upon small hand specimens, unless for the purpose of identifying a mineral, as the results of such work are almost always misleading. Assays are made in duplicate and values determined. Reports are made as follows: Where the value of gold is above \$5 per ton, "The gold assay value is above \$5 per ton"; where the value is less than, but still in the neighborhood of, \$5 per ton, "The gold assay value is less than \$5 per ton"; where the gold exists in traces only, "Gold is present in traces only." A similar form of report is given in the case of silver and of combined gold and silver values. The State law provides that returns for gold and silver above \$5 per ton in value shall read, "Test for gold" or "Test for silver." As the meaning conveyed by these terms is not well understood, the foregoing form of report was adopted as fulfilling the intentions of the law and at the same time being more intelligible to the prospector or other persons receiving the report. The accuracy of the quantitative work is of the same grade as that for rapid "commercial

analyses," and is unchecked unless otherwise stated. Samples and specimens are examined in the order in which they are received.

Inasmuch as this work is subordinated to the work of instruction, returns upon samples and specimens are sent out sometimes after a considerable lapse of time. The Department endeavors to send out reports as soon as possible. The time varies from three to ten days after receipt of samples.

Wherever possible, citizens who avail themselves of the privileges afforded them by this Act should send in ample quantities of material, which facilitates the examination and gives more trustworthy results than are obtained from small specimens. Samples in addition to hand specimens should be sent for examination. All samples and hand specimens should be distinctly marked with the name of consignee and wrapped separately, and a letter giving locality and other information should accompany them.

THE NEVADA ACADEMY OF SCIENCES.

The Nevada Academy of Sciences was organized November 24, 1903. For some time the members of the Faculty of the Nevada State University have felt the need of an organization which would at once bring together the results of scientific research now being carried on in the State, and act as an incentive to stimulate more such work in the future.

The objects of the Academy of Sciences may be grouped under two main heads: First—It is the aim to place all research work upon a firm, rational basis, and to act as the center point for all individual workers. Second—The Academy hopes, by spreading throughout this State and others the important results of its labors, to benefit greatly the community and cause a greater and deeper popular interest in the sciences. The real significance of the scientific method is just beginning to have a true appreciation among the many branches of industry over the country, and nowhere does the welfare of any individual commonwealth need such realization as in Nevada.

At the present time, by reason of small membership, the Academy is divided into two working parts or sections. These are the Section of Social Sciences, and the Section of Natural and Applied Sciences. All lines of work are embraced by these two divisions. They meet on alternate weeks to review and discuss current scientific literature, results of research work and problems of particular value and interest to the State. When the importance of any work will warrant it, the Academy will publish its results in a series of bulletins for free distribution to all the members and for sale to others desiring them.

The Social Science Section is at present busy with archeological data concerning the Indians in this part of the country. This Nation is finally beginning to realize the debt it owes to the civilized world regarding the original inhabitants of the continent, and much work is now being done which will perpetuate our knowledge of the habits, customs, and religion of the North American Indians.

The Natural and Applied Science Section is busily engaged upon a question which is of vital importance to the State of Nevada. This is the great subject of forestry, and in particular, the relations of the forests to the control and conservation of the water supply. The Section plans to outline a careful system of measurements of rain and snowfall, run-off, loss by evap-

oration, and all other pertinent facts. The work will be done as far as possible in conjunction with the Bureau of Forestry of the United States Department of the Interior.

It is urged upon all interested in the welfare of Nevada that the Academy of Sciences is not of academic nature, but is founded upon the broader lines of State welfare. Therefore it is hoped that the citizens living within the confines of Nevada will take an active interest in the organization.

The membership of the Academy is composed of active and associate members. The active members comprise those who are actively engaged in research work in the State; associate members those who are interested in this work, but unable actively to follow it. The constitution also provides for patrons, who shall become such upon the payment of \$50 to the Secretary. The money so obtained will be used to further the aims of the Academy.

The officers of the Academy are as follows: President, Professor Geo. J. Young; Vice-President, Miss Anna H. Martin; Secretary, John A. Reid; Treasurer, Professor Gordon H. True.

Of the Natural and Applied Science Section, Dr. P. Beveridge Kennedy is Chairman and Professor N. E. Wilson Secretary. Of the Social Science Section Dr. J. E. Church is Chairman and Librarian Irvin W. Ayres, Secretary. All communications should be addressed to the Secretary of the Academy.

STATE HISTORICAL ASSOCIATION.

To save much of the data concerning the early history of the State which must perish with the passing of the early pioneers if not speedily gathered and recorded, a movement has been started by the Department of History to organize the citizens of the State into a State Historical Association. While the immediate object of this association is the gathering and preserving of facts and relics bearing on the early history of the State, its ultimate purpose is to preserve and publish the records of the more recent development of the State as well.

UNIVERSITY EXTENSION LECTURES.

The numerous lectures given in various parts of the State during the past two years by the Departments of this University will be continued the present year by the President of the University, who is planning to visit the principal centers of population in Nevada and Eastern California. The theme of his lectures will be the struggle of Japan to become a world power. These lectures will be based chiefly upon personal studies and observations made during a recent trip through Japan.

During the winter of 1905-6 a new course of lectures will be offered in Travel, Literature, History, Education, and Science, while the Farmers' Institutes (by the Station Staff) will be continued as hitherto.

PUBLICATIONS.

In addition to the bulletins of the Experiment Station and of the Academy of Sciences which will appear from time to time, there are the following publications: The University Bulletin has been established to keep the people of this State and the Universities of other States in closer touch with the University life and aims. This periodical is issued by the Committee

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on Publications once a month and may be procured at the nominal price of twenty-five cents a year. Bulletins of the Geological and Mining Department aim to place before the public facts and figures of economic value along the lines indicated.

THE ACADEMIC YEAR.

The academic year of forty weeks begins about the first of September and closes about the first of June. This year is divided into two terms by the holiday vacation. Examinations are held at the close of each of the two terms.

THE FACULTY.

The Faculty consists of the President, the Dean, professors, associate professors, assistant professors, and instructors. Its administrative work is divided among the several standing committees. The Faculty also acts as an advisory body on any question of general policy that may be submitted to it by the President or the Regents.

GOVERNMENT OF THE STUDENTS.

In the government of the University the largest liberty consistent with good work, good order and good character is given the students. There is no formulated code of laws governing their conduct. Their habits of life are expected to be such as to promote daily cultivation of high moral character. They are expected in all their relations to each other and to the University to observe the usages of good society without requiring special regulations for that purpose. They are expected to be punctual and regular in their attendance upon all University exercises. The State provides its bounty for the earnest and industrious student. The indolent or the unworthy will not be retained in the University. Young men and young women who do not intend to give themselves up to the very highest demand of University life are advised to remain at home or go elsewhere.

AIDS TO MORAL AND RELIGIOUS CULTURE.

A Young Women's Christian Association has been organized among young ladies of the University, for religious and social improvement.

The churches of the Town of Reno are cordially thrown open to the students, whose interests are largely consulted by the pastors in their pulpit instruction and in their plans of work. There are churches of the following communions in the city, each with flourishing organizations directed to the spiritual and social life of young people: Roman Catholic, Episcopal, Methodist, Adventist, Congregational, Baptist, Presbyterian, Christian, Christian Science, Salvation Army, and Volunteers of America.

All the restrictions placed upon the students in their University life rest upon the basis of a sound ethical culture.

FACILITIES FOR PHYSICAL TRAINING.

The University is provided with an excellent gymnasium, and a physical director has charge of the department of physical training and hygiene for young women and of athletics for both young men and young women.

A fine athletic field of six acres loaned to the University by Regent J. N.

Evans, recently deceased, has been set apart and equipped especially for open-air sports. The Campus provides room for tennis courts, as well as for the military drill field. The policy of the University is to foster the spirit of honor and gentlemanliness in athletics, to suppress evil tendencies, and to see to it that athletic sports shall not encroach upon the claims of scholarship.

RULES GOVERNING STUDENTS PARTICIPATING IN ATHLETICS.

To represent Nevada State University in any public contest, a student must conform to the following rules:

SECTION I.

RULE 1. He must be an amateur.

RULE 2. If a candidate for a degree, he must attend regularly all the exercises of his class.

RULE 3. If a special student, he must give evidence of good faith regarding his intention to remain a full year in the University. He must also take courses amounting to not less than fifteen hours a week and attend regularly the exercises in such courses.

RULE 4. Like other students, he must maintain satisfactory standing in his class. A student who does not maintain a satisfactory standing in one school of the University cannot, by entering another, alter his status as regards these rules.

RULE 5. He must not receive any form of remuneration; that is, he must not receive any pecuniary benefit whatsoever from his connection with any athletic team.

RULE 6. He must pass a physical examination satisfactory to the Committee on Athletics.

SECTION II.

RULE 1. Schedules for all games must be submitted to the Committee on Athletic Sports and approved by them.

RULE 2. A similar approval is required in the case of every individual intending to represent Nevada State University in any single contest.

STUDENT ORGANIZATIONS AND PERIODICALS.

The students have established a series of organizations for their mutual physical, social, intellectual, and spiritual development, such as the Athletic Association, fraternities, literary societies, the Dramatic Club, the Crucible Club for engineering students, the English Club, a debating union, and a Young Women's Christian Association, while concert of action is obtained by the organization of the students as a whole into a Student Body.

The students also, under the leadership of the Independent Association, publish a semi-weekly magazine known as *The Student Record*, while each Senior class publishes an edition of the Senior annual known as the *Artemisia*.

MILITARY SCIENCE AND TACTICS.

1. Appreciation of the advantages of military drill and training in the education of youth is now well-nigh universal. The regular out-of-door drill constitutes one of the best systems of physical training, while at the same

time habits of obedience to lawful authority are instilled which assist materially in the development of good loyal citizens. A general knowledge of the system of national defense and of the organization of the Army and Navy and their relations to the civil power is considered essential to intelligent suffrage.

2. This department is in charge of an officer of the United States Army detailed by the War Department as Professor of Military Science and Tactics and who is also Commandant of Cadets.

INSTRUCTION.

3. Instruction in military subjects is both practical and theoretical, special prominence being given to the former.

ATTENDANCE.

4. All male students of the University, including those in the Preparatory, Commercial, and Special classes are required to receive instruction in this department; but Seniors who are not officers in the Cadet Corps may be excused from further instruction by the President and Commandant whenever the interests of the Corps will not be injured thereby. Students who are physically disqualified for drill may apply to the President to be excused from the practical course only. Every absence must be explained. An unauthorized absence is not only counted as an offense against discipline, but is marked 0. All absences whatever are subject to being made up by extra duty, and unexcused absences in excess of five are punishable by suspension.

ORGANIZATION.

5. Students taking the practical course are designated cadets, and are organized into a battalion which is known as "The Battalion of Cadets of the Nevada State University." This battalion consists, for the present, of two companies and a band.

UNIFORM.

6. Cadets are required upon entrance to provide themselves with a uniform of prescribed design, consisting of coat, trousers, cap, white gloves, and black shoes, with appropriate insignia.

7. Cadets will wear the uniform during drill, but the wearing of composite costume is prohibited, except that a civilian overcoat may be worn over the uniform when the weather demands. A cadet will not dispose of his uniform until he severs his connection with the University. Neatness in dress and appearance is at all times insisted upon.

CADET OFFICERS.

8. Cadet officers will receive commissions from the Governor of the State. These commissions will entitle the Governor to their services in case of insurrection or rebellion. Cadet officers will be ranked after graduation as retired officers of the University Cadets, unless they choose to resign at the time of their graduation. The non-commissioned officers are appointed by the President of the University upon the recommendation of the Commandant.

9. The officers and non-commissioned officers are selected from those cadets who have been most studious, soldierlike in the performance of their

duties, and most exemplary in their general deportment. In general the officers are taken from the Senior class; the sergeants from the Junior class; and the corporals from the Sophomore class.

10. Cadet officers when on duty as such will report all breaches of discipline coming under their notice to the Commandant.

11. No cadet shall in any way attempt to call to personal account another cadet for having, while in the execution of his office, corrected or reported said cadet.

DISCIPLINE.

12. Discipline is that quality which insures prompt, unhesitating, intelligent obedience to legitimate orders. It is an habitual state of mind which is essential to self-control, to the efficiency, health and comfort of troops, and to the proper care of government property. In order to command, one must learn to obey.

13. Military authority will be exercised at all times with firmness, kindness and justice; and superiors are forbidden to injure those under their authority by tyrannical or capricious conduct or by abusive language.

14. Courtesy among military men is indispensable to discipline.

15. Punishments must conform to law and follow offenses as promptly as justice will permit.

16. The punishment to which cadets are liable are:

- (1) Reprimand, private, public, or in orders. Deprivation of privileges.
- (2) Reduction to ranks of officers and non-commissioned officers. Suspension.
- (3) Dismissal.

Punishments of the first class may be imposed by the Commandant; those of the second class by the Commandant with the approval of the President; those of the third class by the Committee on Student Affairs with the approval of the President.

17. The utmost care will be taken of the arms and other public property. Any cadet damaging same shall make good its value.

18. No cadet shall have in his possession at any time any kind of firearm or weapon other than that regularly used on duty.

19. All combinations against proper authority, under any pretext whatever, are strictly prohibited. All deliberations or discussions having the object of conveying praise or censure or any mark of approbation or disapproval towards superiors are prohibited. Application for redress or grievances, if made by individuals in a proper manner, will always receive due attention.

20. In general, conduct prejudicial to good order and military discipline is prohibited.

GENERAL ASSEMBLY.

A general assembly of all the students of the University and all the members of the Faculty is held every Friday. This is the lecture service of the week, and is under the special direction of the President of the University. These weekly lectures are given not only by the members of the Faculty, but also by men and women of special eminence in particular fields of study and travel and business enterprise.

Some claim to originate are correct.

GIFTS.

The gifts to the University during the past year have been of the kind to inspire the officers of the University with the belief that the endowment long needed by the University to extend its lines of influence will not long be wanting. These gifts the University very gratefully acknowledges:

From the Class of 1903, a cement walk from the Station Building to Morrill Hall		\$200.00
An Ingersoll-Sergeant Drill for the Mining School.....		250.00
Improvements to the Regents' Room, by George H. Taylor.....		45.00
The Regents' Scholarship, to the class maintaining the highest average scholarship		75.00
The University Alumni Scholarship, to the member of the Freshman Class of the School of Mines maintaining the highest scholarship..		50.00
The George S. Nixon Scholarship, for general merit		100.00
The J. B. O'Sullivan Scholarship, for merit.....		100.00
Prize by unknown friend, in the School of Domestic Arts (annually)..		10.00
The Philo Sherman Bennett Endowment, the interest of which is to be used to establish the Philo Sherman Bennett Prize, for the best essay on "The Principles of Free Government".....		400.00
The Mrs. C. F. Cutts Lectureship upon "Social Questions from the Christian Point of View" (annually)		200.00

NEEDS OF THE UNIVERSITY.

The attention of the friends of higher education of the State of Nevada is respectfully called to the fact that the State University offers an opportunity for wise beneficence where the results will be large and early. It is a serious mistake not to regard the State University as a noble object for private benevolent endowment. Its work is the praise of those who are competent to pronounce upon its character, but yet its facilities must be greatly increased in order that it may fulfill its mission. Among its most pressing needs we mention the following:

1. A library building, to cost with furnishings \$25,000.

Among the needs of the Library is a library building. The present space allotted to the Library, the basement of Morrill Hall, is inadequate. New books are rapidly accumulating, and during the last two years seven new book-stacks have been required. It is difficult to see where any more stacks can be placed in the present stackroom to meet the needs of the constant growth. Hence a new and larger abode for the Library is needed. Moreover, there should be a building especially designed and adapted to the needs of a library, prominent among which is a sufficient amount of light, which is not obtained in the basement. The book-stacks are necessarily large, and hence shut off the light from the windows, the Librarian frequently being obliged to use the light of a match in order to find a book. The new library building should provide for the admission of light from above, through skylights, which would insure the diffusion of a good light throughout the library. Another fact contributing to the need of a new building is the danger of fire in the present library. If the books were burned, some of them could not be replaced, and the others only at the cost of perhaps \$15,000.

2. A natural history building and museum for the use of the Departments of Geology, Zoölogy, and Botany, where the scientific collections of the University, now packed away in boxes, can be made available to students and to the public.

3. A green-house.

4. The purchase of the athletic field, now leased by the University.

5. Scholarships.

The friends of education, and particularly the friends of the University, are urged to consider the founding of scholarships. There are many unusually competent young men and young women in the State whose subsequent life would be made eminently useful to their generation by means of the discipline of a University course, but whose financial resources are inadequate to obtain it for them. This University is straining every nerve to provide for such cases, but its ability to do so is far less than the worthy demands made upon it. No means of perpetuating a helpful and elevating influence is at all comparable to that which provides a permanent fund, the proceeds of which shall be devoted to educating the young through the growing centuries.

6. Endowments.

An endowment of at least \$2,000 a year, to provide salary and necessary traveling expenses of a University extension lecturer, would result in greatly increased benefits to the more sparsely settled regions of the State, where those now engaged in extension work find it impossible to go.

THE TRI-DECENNIAL CELEBRATION OF THE UNIVERSITY.

omit.

On Wednesday, June 1, 1904, the Thirtieth Anniversary of the founding of the University was celebrated. This anniversary, which occurred at the time of the awakening of the State to renewed vigor, had been selected as a fitting milestone in the life of the University at which to pause for retrospect and prospect, to celebrate a quiet but active growth, and to plan for the greater service which lay before it.

The spirit and events of this occasion have been preserved in the publication of a memorial volume by the University and its friends.

- University Day -

Admission
 ADMITTANCE, ATTENDANCE, AND GRADUATION.

*Admission to University Schools, and the Plan for Accrediting
 the Schools of the State.*

EXAMINATION AND CREDENTIALS.

1. Entrance to all of the University schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. Candidates for admission who are not graduates of accredited schools must present themselves for examination in the common school subjects, and in such high school subjects as they may wish credit for; but students from the Reno Public Schools, who are not graduates thereof, must take an examination commensurate in difficulty with the examinations given in those schools.

3. Any school in the State may be accredited in such subjects of high school grade as it may be able to complete in a satisfactory manner.

4. High schools of other States, if accredited by a State university or other university of first rank, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

5. All students entering the University must pass an examination in English composition, whether from an accredited school or not. This examination will be held in September of each year.

6. All new students of whatever rank should meet the Committee on Admission.

ADMISSION REQUIREMENTS.

Subjects and Units.

GROUP I.

English	15 units ¹
Mathematics—Algebra, Geometry	15 units
Latin	15 units
Physics	5 units
History	10 units

¹A unit, as a measure of the amount of work done, is represented by one recitation a week throughout one whole year, each recitation being of not less than thirty-five minutes duration. Fifteen units represent daily recitations throughout three years; two and one-half units, a half year's work with daily recitations.

GROUP II.

English	15 units
Mathematics—Algebra, Geometry	15 units
German or French	10 units
Physics	5 units
History	10 units
Elective	5 units

GROUP III—ELECTIVES.

Latin	5 units
Physical Geography	2½ units
Chemistry	5 units
Botany	2½ or 5 units
Physiology	5 units
Zoölogy	5 units
Bookkeeping	2½ units

GROUP I admits to all schools. For entrance to the Normal School the applicant may offer, instead of fifteen units of Latin, ten units of Latin and five elective units from Group III.

GROUP II admits to all schools except the classical course.

GROUP III. From this group may be selected any subject or subjects for the five elective units in Group II.

ENGLISH (3 years).

I. LITERATURE.

Required in full—(a) Gray's *Elegy*, *Deserted Village*, *Ancient Mariner*, *Byron* (Selections), *Ivanhoe*, *Silas Marner*, (b) *Sir Roger de Coverley*, *Merchant of Venice*, *Sir Launfal*, *Wordsworth* (Selections), *Bunker Hill Orations*, (c) *Idylls of the King*, *Milton* (*L'Allegro*, *Il Penseroso*, *Comus*), *Julius Cæsar*, *Emerson* (*American Scholar*, *Self-reliance*, *Compensation*), *Reply to Hayne*, *Chaucer's Prologue*.

Optional—(a) *Alhambra*, *Franklin's Autobiography*, *Irving's Life of Washington*, (b) *Vicar of Wakefield*, *Plutarch's Lives*, *The Illad*, I, VI, XXII, XXIV, *King Lear*, *Parkman's Oregon Trail*, *Burns' Poems*, *Tale of Two Cities*, (c) *Lowell's Democracy*, *Paradise Lost*, I, II, *Macbeth*, *Shelley* (Selections), *Lamb's Essays*, *Macaulay's Essay on Milton*, *Macaulay's Essay on Addison*, *Genesis*, *Ruth*, *Exodus*, *Esther*, *Proverbs*, *Job*, *Psalms*, *St. John*, *Old English Ballads* (*Otterburn*, *Chevy Chase*, *Robin Hood*).

II. WORD ANALYSIS.

Swinton's *Word Analysis* completed will be required of all who seek admission to the University.

III. COMPOSITION.

A knowledge of the general principles of composition will be required. The candidate should be able to write legibly and neatly, to spell and punctuate correctly, and to express himself grammatically. He should have very definite ideas of the sentence and of the paragraph as units of discourse, and should be able to coördinate his thoughts.

IV. TECHNICAL GRAMMAR.

Whitney's *Essentials of English Grammar*, or an equivalent book, will represent the amount and grade of work required.

MATHEMATICS.

I. ACADEMIC ALGEBRA ($1\frac{1}{2}$ years).

The requirements in academic algebra will include the following divisions of subjects:

Thorough mastery of the fundamental processes of addition, subtraction, multiplication, and division. Equations of the first degree, simple and simultaneous, factoring, H. C. F. and L. C. M. The requirements will also include fractions, fractional equations, and powers and roots.

II. PLANE GEOMETRY ($1\frac{1}{2}$ years).

The preparation in plane geometry should cover five books of Beman and Smith's *Plane and Solid Geometry*. The candidate should be able to apply theorems already learned to the solution of problems.

LATIN (3 years).

(a) Collar and Daniell's *First Latin Book*, with the exception of the *Colloquia*, Collar's *New Gradatim*, and D'Ooge's *Colloquia Latina*, pp. 1-31, the exercises in the latter to be read only at sight, represent the nature and amount of preparation required.

(b) Greenough, D'Ooge, and Daniell's *Second Year Latin*, pp. 1-220, excepting *The Story of Ulysses* and exercises 22, 24, 27, 30, 33, 34, 35, in Part I, which, on account of their difficult style, may be omitted. The exercises in composition, except those based on the above exercises to be omitted, and the work in Latin grammar will be required. The exercises in composition based on Part II, *Cæsar*, will be found in D'Ooge's *Latin Composition Based on Selections from Cæsar*. (Ginn & Co., Chicago.)

(c) Kelsey's *Selections from Ovid*, and Gayley's *Classic Myths*. In place of all, or any part, of Ovid may be offered an equivalent amount of Cicero's *Orations and Letters*. The requirement in Gayley's *Classic Myths* will, however, be maintained.

Thoroughness of preparation is especially desired and the work of "Second Year Latin" should not be taken up until all the requirements of "First Year Latin" have been fully met. Candidates for admission to the School of Liberal Arts who have completed two years of Latin may find it possible, providing all other entrance requirements have been fully met, to finish their University course in four years, but two and, preferably, three years' work in Latin, as outlined above, should be presented for admission to avoid the extra work involved in removing deficiencies.

GERMAN (2 years).

A thorough knowledge of the principles of German grammar should be acquired. This includes the conjugation of weak and strong verbs, and of the modal and time auxiliaries; the declension of nouns, pronouns, articles, and possessive pronouns; the three declensions of adjectives; rules as far as possible governing the gender of nouns, and the formation of plurals; the

uses of the modal auxiliaries, of separable and inseparable verbs, and of the subjunctive.

Collar's Shorter Eysenbach may be used at first, with Joynes-Meissner's Grammar later. Waldnovellen, Germelshausen, or some preparatory German reader, should be mastered in the first year.

The second year's work should consist of reading and translation of the following texts or equivalents: Schiller's *Maria Stuart*, Modern Prose and Poetry.

The work in German composition should be continued through the second year. Harris' German Composition is recommended.

FRENCH (2 years).

Too much stress cannot be laid on the importance of a thorough and accurate knowledge of the fundamental principles of French Grammar. This involves: (1) The mastery of the three regular conjugations as well as of the irregular verbs, and the uses of the various auxiliaries; (2) Familiarity with the rules for forming the feminines of adjectives, the plurals of nouns and adjectives, and those governing the position of the adjective, of the object pronoun, of the negative, and of the adverb; (3) An understanding of the uses of the definite article (together with those cases where it is omitted), the classification of the pronouns and their inflections according to their several uses, the partitive constructions, the agreement of participles, and the various uses of the subjunctive. For elementary work the student may use Chardenal's Complete French Course; later Fraser and Squair's Grammar is recommended.

All the common idioms must be carefully studied. In so far as is possible, the construction should be made clear and the literal meaning should be given. The idioms should be committed to memory.

From the outset there should be work in translating from English into French. At first the exercises to be found in the grammar will be sufficient. After the first year, the available time must be spent largely on the translation of French into English.

The rules for French pronunciation should be acquired by careful reading aloud.

When the grammar has been mastered, the translation of French texts should begin. For the first, selections from Rollins' or Super's French Reader are advised. The work must include the translation into English of the following texts or their equivalent: *Le Voyage de M. Perrichon*, by Labiche and Martin; *About's Le Roi des Montagnes*; *Daudet's Le Petit Chose*; *de Banville's Gringoire*; *Meilhac and Halévy's L'Été de Saint Martin*; *Coppée's Le Luthier de Cremone*; *Le Trésor*.

All translations must be accurate, and as literal as possible without sacrificing good English.

PHYSICS (1 year).

The requirements in physics include a knowledge of all of the most essential parts of elementary physics, with all of the important laws from each of the main subdivisions, as properties of matter, mechanics of solids, liquids, gases, sound, heat, magnetism, electricity, light.

The candidate will submit a laboratory note-book, which will include all of the work performed by him in the laboratory; the note-books should be neat and all results carefully recorded, describing in each case the object of the experiment, the apparatus used, the observations and conclusions. The note-book will not be accepted unless signed by the teacher as evidence that all the work has been performed by the candidate.

Text-books recommended are: A Brief Course in Physics, by Hoadley, or High School Physics, by Carhart and Chute, or Andrews and Howland's Elements of Physics.

The experiments performed in the laboratory should be quantitative. As a minimum amount of laboratory work the following is suggested:

1. Determination of volume from dimensions.
2. Determination of volume by displacement.
3. Condition of equilibrium of three parallel forces.
4. Moments of two forces on a lever.
5. Equilibrium of three concurrent forces (or parallelogram of forces).
6. Effect of amplitude and material upon the period of a pendulum.
7. Effect of length upon the period of a pendulum.
8. Boyle's Law.
9. Specific gravity of a solid which will sink in water.
10. Specific gravity of a floating solid.
11. Specific gravity of a liquid.
12. Center of gravity.
13. Mechanical advantage of pulleys.
14. Expansion by heat.
15. Heat of vaporization of water. Dew point.
16. Specific heat of a solid.
17. Measure of the velocity of sound by a resonance tube.
18. Number of vibrations of a fork.
19. Vibrations of stretched strings.
20. Images in a plane mirror.
21. Images in a concave mirror.
22. Images in a convex lens.
23. Index of refraction.
24. Photometry.
25. Magnetic field with iron filings.
26. Magnetic field with compass.
27. Magnetic field about an electric current.
28. Arrangements of cells for maximum current.
29. Measurements of resistance.
30. The electromotive force of cells.

Other experiments of general importance may be substituted or added.

HISTORY (2 years).

I. *English History.* Aim to study the important epochs such as the Anglo-Saxon Conquest, the Norman Conquest, the Struggle for the Great Charter, the Great Social Awakening commencing with 1297, the Reign of Elizabeth, etc. The main purpose of the requirement is to prepare for an intelligent

study of English literature, therefore constant reference should be made to the literary development of the English people.

The following partial list of reference books is recommended:

- a. Bates and Coman: *English History Told by English Poets.*
- b. Larned, J. N.: *A History of England for the Use of Schools and Academies.* Houghton, Mifflin & Co., Boston, 1900.
- c. Terry, Benjamin: *A History of England for Schools.* Scott, Foresman & Co., Chicago, 1903. (See excellent outline of English History given in table of contents.) \$2.
- d. Green, J. R.: *A Short History of the English People.* Harper & Brothers, New York, 1888. American Book Company, \$1.20.
- e. Gardiner, S. R.: *A Student's History of England;* 3 vols. Longmans, Green & Co., New York, 1895. \$3.
- f. Traill, H. D.: *Social England;* 6 vols. G. P. Putnam's Sons, New York, 1898. \$3.50 per volume.
- g. Cunningham, W., and McArthur, E. A.: *Outlines of English Industrial History.* University Press, Cambridge, 1898. \$1.50.

II. *Ancient History* should be studied in three parts: The Beginnings of Civilization, or the early Oriental Theocracies; Greece and Macedonia; Rome to the time of Charlemagne.

a. *The Beginnings of Civilization:* Beginning with a study of the nature and origin of civilization, trace the struggle for civilization through the early Oriental monarchies: Egypt, the Tigris-Euphrates Valley, Judea, Phœnicia, and Persia. India, China, and the Aztec life of North America may also be studied if time permits. Seek to acquire a clear understanding of the general characteristics of Oriental civilization as opposed to those of European life.

b. *Greece and Macedonia:* Study the development of political, religious, social, economic, and educational ideas; determine the difference in development of Athens and Sparta and the reasons for the leadership of Athens after the Persian Wars; seek the causes of the decline of Greece and the rise of Macedonia, and give some little attention to the great Hellenic world after Alexander down to the time when it became a Roman province.

c. *Rome to the time of Charlemagne:* Follow same plan of development as in "b." Pay little attention to military history and to individual reigns. Emphasize the growth of institutions.

Recommended Texts.

- 1. West, Willis Mason: *Ancient History.* Allyn & Bacon, Boston, 1902.
- 2. Wolfson, Arthur Mayer: *Essentials of Ancient History.* American Book Company, New York, 1902.

Recommended Reference Books.

- 1. Buckle, Henry Thomas: *History of Civilization in England.* 3 vols. Longmans, Green & Co., London, 1885. (Especially vol. I, ch. II.)
- 2. Rawlinson, George: *Ancient Monarchies.* 5 vols. Dodd, Mead & Co., New York. \$6.25.

3. Walker, A. P.: Essentials in English History. American Book Company.

4. Grote, George: History of Greece. 12 vols. Harper & Brothers, New York. \$17.50.

5. Mahaffy, J. P.: Problems in Greek History. Macmillan & Co., New York, 1892. \$2.50

6. Mommsen, Theodor: History of Rome. 3 vols. Chas. Scribner's Sons, New York, 1891. \$10.

7. Mommsen, Theodor: History of the Roman Republic. Abridged edition. Chas. Scribner's Sons, New York, 1899. \$1.75.

8. Smith, Wm.: A Dictionary of Greek and Roman Antiquities. 2 vols., 3d ed. John Murray, London, 1890.

III. *American History and Civics*. Study civics in connection with history; local government of township and county in the colonies; National government commencing with the Constitutional Convention of 1787, showing the development from the Confederation.

For reference works see the recommended list in the History Pamphlet.

NOTE-BOOK WORK.

For note-book work follow the pamphlet, *Instructions Regarding the History of Note-Book and Entrance Requirements*, which may be obtained at the University office for twenty-five cents per copy. While the spirit rather than the letter of these requirements is to be followed, note-book work will be required.

PHYSIOLOGY (1 year).

Five hours a week for one year should be given to this subject, of which two hours should be devoted to laboratory work. A microscope and prepared slides of human or animal tissues are a necessity. Martin's Human Body (Briefer Course), Hewes' High School Physiology, or Macy and Norris' Physiology for High Schools, are recommended as texts. The text-book should be supplemented by readings on matters pertaining more particularly to hygiene. Pyle's Personal Hygiene and Abbott on Hygiene of Transmissible Diseases are recommended as such supplementary texts. The laboratory work should follow the outlines given in the text, and all drawings and notes should be submitted to the Department of Physiology at the time of entrance.

SAMPLE EXAMINATION QUESTIONS.

1. Describe the structure and activities of a typical cell. Why is a clear understanding of cell life essential to our understanding of the physiology of the human body?

2. Draw a diagram of some joint with the bones and muscles in position, and explain clearly the mechanism of each part.

3. Explain fully what is meant by salivary, gastric, and intestinal digestion. What is meant by osmosis or dialysis, and what relation does it bear to the absorption of food through the walls of the digestive tube?

4. Describe the action of the valves of the heart. What is hæmoglobin, and what is its use? Why is there a portal circulation?

5. Describe the mechanics of thoracic and abdominal respiration, and

illustrate by diagrams. How does a gland like the sweat gland secrete and excrete?

6. Name the principal subdivisions of the brain, and give the functions of each. How do we know that a particular region of the brain has a particular function? Illustrate by diagrams of nerve cells and nerve fibers the difference between a reflex and voluntary act.

7. Show clearly how the eye accommodates itself for near and far vision, Give the bearing of this upon near and far-sightedness and the hygiene of glasses.

8. Why should food be thoroughly chewed? Why should meals be regular? What is the proper kind of a seat for a young child, and why? Why does carrying books under one arm by a school child tend to deformity? Give three reasons why mouth breathing is bad.

9. Explain fully why reading while lying down is bad. Why is exercise in the open air best? Why should it be systematic? Why should we not read while eating? Why should the hair be shampooed and the body bathed from a purely physiological standpoint? Why do we catch cold, and how?

10. Name some contagious diseases? What are bacteria? Where are they found? How do they become scattered? How do they gain an entrance to the body? How do disease germs cause disease? How does the body resist disease? What is meant by disinfection? Name three good disinfectants, and describe the mode of application. Why should a consumptive not be allowed to expectorate on the street? In how many and what ways may typhoid fever be spread? What general steps should be taken to stamp out an infectious disease like anthrax among cattle, and why?

ZOOLOGY (1 year).

Five hours a week for a whole year should be given to this subject. Of these five hours, three should be devoted to laboratory work, and the other two to lectures and recitations. The laboratory work should be of such a nature as that outlined in Davenport's *Introduction to Zoölogy* (The Macmillan Company, New York), or Merrill's *Studies in Zoölogy* (American Book Company, San Francisco). All notes and drawings should be submitted to the Department of Zoölogy at the time of entrance.

SAMPLE EXAMINATION QUESTIONS.

1. Name all the branches (phyla) of the animal kingdom. Give a brief characterization of each, and name a common example.

2. Describe in detail the method of locomotion of the earthworm, and mention three other locomotion types.

3. How does the hydra capture and swallow its food? Mention three devices in other groups of animals for obtaining food.

4. Describe in detail the changes which take place in the frog's egg (or that of some other animal) up to and through the tadpole stages to the adult.

5. Give a detailed account of the frog's breathing. In what respects is it like, and how does it differ from, the process in the fish, the fresh-water snail, the earthworm, and the butterfly?

6. What produces the lines of growth in the snail's shell? How many

appendages has the cabbage caterpillar, and how do they differ from each other? Is the caterpillar a worm? Why?

7. Give instances from your own observation of protective resemblance. What is meant by adaptation? Name the kinds of adaptation, and give instances.

8. Give instances of instinct. If possible, give some example of animal intelligence which has come under your observation, and discuss it.

9. Make a list of the animals in your neighborhood with remarks as to eyes, ears and feelers; number, position, keenness.

10. What is meant by evolution, natural selection, struggle for existence, variation, and heredity?

11. Which animals in your neighborhood are useful and which are harmful to man's interests?

CHEMISTRY (1 year).

The elements of chemistry as contained in Williams' Elements of Chemistry, or Dennis and Clarke (these two books filling the requirements better than any other now on the market), should be completed. Aside from this the pupil should have prepared the experiments as given in Williams' Manual or Dennis and Clarke's Manual. Notes should be carefully kept and submitted to the Department of Chemistry at the time of application for admission.

Special attention should be given to fundamental principles, such as chemical and physical changes, atoms, molecules, laws of combination, valence, formulæ and reactions, compounds, etc.

BOTANY ($\frac{1}{2}$ or 1 year).

Two and one-half credits will be allowed to any high-school student who has an intelligent knowledge of Andrews' Botany All the Year Round, from page 1 to 233. (American Book Company.) \$1.

For five credits the entire book should be covered and a laboratory notebook of carefully executed drawings presented. The candidate will also be required to have read at least two of the references given for each chapter in the Appendix on pp. 289 to 293.

PHYSICAL GEOGRAPHY ($\frac{1}{2}$ year).

Two main view points in studying the subject:

1. Relation of earth to man—the study of man's environment of physical nature.

2. Earth viewed as a living, growing organism—this idea furnishes the unity binding together all the study of earth forms and processes.

For a half-year or term course of study the following brief outline is given:

1. Study of the earth as a unit.

a. In relation to other worlds and suns (the earth's sociology).

b. The form, size, and shape of the earth (the earth's morphology).

But little time need be given to this part of the subject, the most general facts only being needed in a high-school course. Most important is earth's movements under "a."

2. General features of the earth. (The earth's organography, or anatomy.)

a. The atmosphere, embracing the nature and extent of air, its effect in winds and storms, with full reasons governing. Also dew, frost, rainfall, etc.

b. The ocean. Forms and extent; uses, composition, density, temperatures, etc. Icebergs. Ocean shores and bottoms, nature of each and forms, continental shelves. Waves—nature, size, etc., causes. Currents—nature, causes and positions, effect upon temperature. Tides—nature, causes, results. Size of ocean, distribution, causes, etc. Peculiarities of mediterranean seas.

Climate should be studied under each separate topic; at the same time correlation with mankind should be made. In other words, climate and man furnish one of the connecting threads between the separate topics, the other being that of earth change and growth.

c. The land. Forms and extent of the land. The physiographic features of the earth, entering into causes of each. Mountains, plains, volcanoes, etc. Life on land. Plant and animal, distribution of each and bearing of climate on this, and the result to mankind.

3. Waste of land by earth agencies (earth physiology).

a. Rivers and ocean, The circulation of water, the earth's life fluid. The results of this ceaseless action.

b. Ice, as glaciers and icebergs.

c. Contest between water and land, resulting forms, coastal plains, ocean beaches, etc.

4. Uplifting of land *versus* oceanic action of leveling; nature of mountains, volcanoes, plateaus, etc. Secondary volcanic phenomena, geysers, hot springs, etc.

Again, emphasize the two threads of unity throughout; relation of all to man; and relation of each earth change to earth growth.

Books recommended in order of value: (1) Davis; (2) Dryer; (3) Tarr.

BOOKKEEPING ($\frac{1}{2}$ year).

The bookkeeping required for admission to the University corresponds in amount and character of work to that outlined in the Sadler-Rowe budgets 101 and 102 up to March 15th. This includes simple double-entry books, the making of balance sheets, the use of invoice, sales and cash books, etc., and should include thorough understanding of checks, notes, drafts, billing, and, generally, all of the papers used in modern business.

ACCREDITING OF SCHOOLS.

Any school in the State may be accredited in such subjects of high school grade as it may be able to complete in a satisfactory manner.

To obtain such credit, formal application should be made by the Principal to the Committee on the Accrediting of Schools, accompanied by a detailed statement of the work being done, including text-books, number and length of recitations, and number of weeks each subject is taught.

The inspection of such schools will be made each year, where possible, by members of the Committee. To supplement such inspection, however, sample

examination or other test papers covering the work done in the individual courses should be forwarded as early as possible each year to the Committee for submission to the University departments concerned. If the result of the examination is satisfactory, the school will receive the credit requested. Graduates of such accredited schools may, on the recommendation of their teacher, be admitted to the University in the subjects in which their school has been accredited, but in all other subjects an examination will be required.

High schools having but one teacher doing high school work, or doing partly grammar and partly high school work, are advised not to attempt more than the first year's work of the high school. Those pupils who have been prepared in all of the subjects of the first year will, as a rule, be able to continue their studies far more advantageously than if they are prepared in two or three years' work of any one or more subjects.

A conference of high school teachers and members of the Committee will be held each year on the Saturday following the Academic meet.

Admission to the University High Schools.

1. Admission to the High Schools will, in general, be by examination upon the subjects usually completed within the eight years of the primary and grammar grades, viz.: arithmetic, grammar, geography, elementary United States history, reading and penmanship; and candidates from the Reno Public Schools must pass an examination commensurate in difficulty with the examinations in those schools.

Examinations may be taken in the candidate's home school, or at the office of the County Superintendent, to whom the necessary examination questions will be sent. The papers must in all cases be returned to the Committee on Entrance at the University, for grading. Blank certificates for the above information will be sent free upon application to the Principal of the Preparatory High School.

2. But graduates from Nevada ungraded or grammar schools where there is no high school in connection will be admitted on credential, provided the teacher has been accredited.

Such teacher is one who has established the efficiency of his instruction through the success of his pupils in passing the entrance examination and in maintaining satisfactory standing as students at the University.

3. Candidates from grammar schools of recognized standing in other States or from ungraded or grammar schools where a careful system of supervision is enforced will also be admitted on credential.

SPECIAL STUDENTS.

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; but such special students shall be recognized only in the University schools and in the Commercial High School and, with the exception of candidates for admission to the School of Domestic Arts and Science, must be at least twenty years of age. The Faculty may grant exceptions to this rule for adequate

ADVANCED STANDING.

EXPENSES OF STUDENTS.

The railways of the State are generously coöperating with the Regents of the University by giving reduced rates to students when traveling to and from their homes and the University. The Southern Pacific Company, the Virginia and Truckee, the Nevada Central, and the Eureka and Palisade railways will sell tickets to students at one-half the usual local rate. To obtain the benefit of the half rates the student must accompany his application for a ticket with a certificate from the President of the University. These certificates may be obtained by writing to the "President of the State University, Reno, Nevada." Students coming to the University from points outside the State must pay full fare to the State line.

All the text books used in the University may be purchased at the Registrar's office at a price which covers the actual cost of purchasing and keeping these books. No credit will be given purchasers of books.

To maintain its large and valuable laboratories is a constant and heavy expense to the University. It is impossible for the Regents to provide material in these laboratories free of all expense to the students. For this reason the Regents have established a moderate charge for the material actually used by the student as follows:

For General Chemistry, per term	\$2.50
For Qualitative Chemistry, per term.....	2.50
For Quantitative Chemistry, per term	2.50
For Agricultural Chemistry, per term	2.50
For Mineralogy, per term.....	2.50
For Junior Assaying, first term.....	5.00
For Junior Assaying, second term	7.50
For Senior Metallurgy, per term.....	10.00
For Typewriting, per term.....	1.00
For Zoölogy, Botany, and Hygiene, one-half course.....	1.00
One full course.....	2.00
Two or more courses.....	2.50
For Sewing, per term.....	1.00
For Cooking, per term	1.00

The following deposit fees will be required of students in the department to which the subject belongs, but will be returned at the end of the year to

the student less the amount of breakage or damage of material given to the student. The general guarantee fund is applied to necessary incidental repairs about the grounds and buildings, and no part of this fee will be returned:

Practical Mechanics, per term	\$3.00
General Chemistry, per term.....	2.00
Quantitative Chemistry, per term.....	5.00
Qualitative Chemistry, per term	5.00
Agricultural Chemistry, per term.....	5.00
General Guarantee Fund, per term.....	.50

EXPENSES OF LIVING.

MANZANITA HALL is the University home for young women. Miss Frances E. Short, a lady of large experience and wisdom, is Mistress of Manzanita Hall. In regard to ventilation, heating, light, and the furnishing of the rooms, all the equipment and arrangements are of the very best kind for the health and comfort and culture of the occupants. Young ladies coming to Manzanita Hall should provide themselves with the following articles:

Four white table napkins; four sheets, $2\frac{1}{4}$ yards by $1\frac{1}{2}$ yards; 4 pillow cases, 20 inches by 30 inches; 2 white bed spreads, same size as sheets; 1 pair of blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6, to put on mattress; 6 good towels; 2 aprons for work in shop and in laboratory; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and personal wearing apparel should be plainly marked with the name of the person.

No special charge is made in the way of room rent to the young ladies.

LINCOLN HALL is the college home for young men. The fine building has accommodations for one hundred young men, and is equal to the best of modern college halls. The head master of Lincoln Hall is Mr. Richard Brown. Young men coming to Lincoln Hall should provide themselves with the following articles:

Four white table napkins; 4 sheets, $2\frac{1}{4}$ yards by $1\frac{1}{2}$ yards; 4 pillow slips, 20 by 30 inches; 2 white bed spreads, same size as sheets; 1 pair blankets; 1 comfort, same size as sheets; 1 comfort, extra thickness, 3 feet by 6, to put on mattress; 6 good towels; personal toilet articles, such as soap, sponges, comb, brushes. All articles of room equipment and wearing apparel should be plainly marked with the name of the person.

No special charge is made to the young men for room rent in Lincoln Hall.

Rooms in private houses can be rented for \$8 to \$10 per month.

TABLE BOARD—For the accommodation of the students, the President of the University has maintained for several years a dining hall which in the coming autumn will be removed to commodious quarters built especially for it between Manzanita Hall and Lincoln Hall. The dining hall equipment and service has been recently reorganized with a view to securing board and table service of the most acceptable character. The price of table board for the coming year will be \$16 a month, payable in advance. If the board is not paid until after the fifteenth of the month an additional charge will be made of twenty-five cents a day until the account is settled. If the board bill is not paid by the last day of the month, the privileges of the dining hall

will be denied until the bill has been paid. *No deviation will be made from the above regulations.* After the expenses of the dining hall have been fully met, any surplus is paid over to the Board of Regents to pay for service rendered in maintaining Manzanita Hall and Lincoln Hall.

Table board can be obtained elsewhere at from \$20 to \$25 per month.

AID TO STUDENTS.

It is the purpose of the officers of the University to aid meritorious students of limited means so far as it lies in their power. Almost all of the work in and about the University buildings and grounds is now done by students. The skill that the young men acquire in the carpenter and machine shops enables them to do most of the repairing and building required on the grounds. Young women are favored whenever possible with such work as typewriting, copying, and housework. It is to be remembered that the power to favor students with self help is limited by circumstances, and *therefore students cannot expect to earn enough to pay all their expenses while pursuing their studies.*

PROMOTION.

MAXIMUM LIMIT OF HOURS.

In general, students are recommended to follow the regular course of study as nearly as possible, taking each year the number of hours prescribed for that year. Students may, however, for the year 1905-6, at their discretion, elect courses aggregating three hours in excess of the prescribed number, exclusive of military drill and physical culture.

ATTENDANCE UPON RECITATIONS AND LECTURES.

The requirements for punctual and regular attendance upon all recitations, lectures, and other prescribed college exercises are exact and firm. Professors may excuse students on account of necessary absence from their classes, if the reasons seem valid. All unexcused absences are reported to the President's office and may subject the student to admonition, suspension, or dismissal. Students who find it necessary to leave before the close of the year and who expect to return, and students desiring to be absent for a period of time, should obtain leave of absence from the President.

FINAL GRADES.

Each instructor shall determine the final grade of students by any method that he may consider best adapted to his courses.

CONDITIONS.

1. Any student who, in any course, receives a final grade of less than 70, and over 50, shall be passed conditionally.

2. Any student thus conditioned may remove such condition by taking a reëxamination of such nature as the instructor may prescribe, in which reëxamination he shall receive a final grade of not less than 70, the class record to be considered as in case of final term standing.

3. One and only one reëxamination may be given for the removal of any one condition.

4. This examination may be taken at the option of the student either at the beginning of the semester next succeeding the one in which the condition

shall have been given, or at the beginning of the next succeeding semester. The regular time for such reexaminations shall be the first week of each semester.

5. Any condition which is not removed by the end of the first week of the second succeeding semester shall become a failure and shall be governed by rules for failures.

6. Entrance conditions must be removed within one year from the date of entrance.

FAILURES.

1. Any student who receives a final grade of 50 or less shall be considered as having failed in such course. Any student who passes conditionally in any course and fails to remove the condition within the prescribed time shall be considered as having failed.

2. Any student who shall have failed in any course shall be required to repeat the course regularly in the next succeeding class, unless the Faculty shall by vote permit an extension of time or the substitution of another course.

miss long
3. Any student who has failures aggregating over eight units in any one semester shall be thereby debarred from further privileges in the University, unless the Faculty by vote remove such disability.

GRADUATION.

For graduation from the Nevada State University, an attendance of at least one year and the completion of the course of study of some University school is required. Credit is given for work done in other institutions of similar rank and character.

THESIS REQUIREMENTS.

A satisfactory thesis, prepared in accordance with the following rules, must be presented by each candidate for graduation as an essential condition for graduation from any school of the University.

The thesis is intended to give the student an opportunity to make a comparatively independent effort in some chosen field while still under the guidance of some department, and to test his ability for such independent work in a way that cannot well be done in connection with ordinary class work.

It is expected, therefore, that such thesis will show the following characters, and its merits will be determined upon these points: Originality (comparative) and individual effort; scientific or literary knowledge; careful preparation; good arrangement and presentation of subject.

In order to insure time for satisfactory preparation of his thesis, the student will elect and pursue thesis work in some department as he would any regular elective course.

Both subject and department should be reported to the Committee on Theses not later than the first Monday in November, and *all theses* should be completed and presented to the Committee on Theses on or before the first day of the final examinations in May.

The thesis should be prepared upon the officially designated paper and bound in the officially designated cover. All maps and drawings or other

illustrations should be so arranged that they can be bound within the same cover. Theses must be typewritten.

The title page should conform to the style of the following sample title page:

NEVADA STATE UNIVERSITY
THE ORIGIN OF THE ENGLISH GILDS

A DISSERTATION
SUBMITTED TO THE FACULTY OF THE COLLEGE OF ARTS AND SCIENCE,
IN CANDIDACY FOR THE DEGREE OF
BACHELOR OF ARTS

(Department of History)

By
JOHN EDWARD SMITH
Reno, Nevada
1905

DIPLOMAS AND BACCALAUREATE DEGREES.

1. The degree of Bachelor of Arts is conferred upon students who have completed in a satisfactory manner the four years' work of the School of Liberal Arts.

2. The degree of Bachelor of Science is conferred upon students who have completed in a satisfactory manner the four years' work of the School of General Science, the School of Mining Engineering, the School of Mechanical Engineering, the School of Civil Engineering, or the School of Agriculture.

3. A Normal School Diploma, entitling the holder to a State Teacher's Certificate of High School Grade, is awarded to students who have completed in a satisfactory manner the four years' work of the Advanced Normal Course.

4. A Normal School Diploma, entitling the holder to a State Teacher's Certificate of Grammar Grade, is awarded to students who have completed in a satisfactory manner the work of the Elementary Normal Course.

HIGHER DEGREES.

The Master's Degree is conferred only upon students who, after receiving the Bachelor's Degree, have pursued successfully work of an advanced character for at least one full academic year.

Candidates for the Master's Degree who have received their Baccalaureate Degree from the University may receive permission to do one-half of their graduate work in some other college or university of high rank.

A part of the required work is a thesis which must show capacity for independent research.

1. The degree of Master of Arts is conferred upon students who, after receiving the degree of Bachelor of Arts, pursue a prescribed course of study of advanced character successfully for at least one academic year.

2. The degree of Master of Science is conferred on students who, after receiving the Degree of Bachelor of Science, pursue a prescribed course of study of advanced character successfully for at least one academic year.

3. The requirements for the degree of Mining Engineer, Mechanical Engineer, and Civil Engineer are under consideration.

COLLEGE OF ARTS AND SCIENCE

- 1. SCHOOL OF LIBERAL ARTS**
 - 2. SCHOOL OF GENERAL SCIENCE**
-
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COLLEGE OF ARTS AND SCIENCE.

FACULTY.

JOSEPH EDWARD STUBBS.....	President
HENRY THURTELL ¹	Dean, Professor of Mathematics
ROBERT LEWERS.....	Secretary, Professor of Political Economy
NATHANIEL ESTES WILSON.....	Professor of Chemistry
JAMES EDWARD CHURCH, JR.....	Professor of the Latin Language and Literature
LAURA DE LAGUNA.....	Associate Professor of the Modern Languages
ANNA HENRIETTA MARTIN.....	Lecturer in the History of Art
JEANNE ELIZABETH WEIR.....	Associate Professor of History
LYSANDER W. CUSHMAN.....	Professor of the English Language and Literature
GEORGE DAVIS LOUDERBACK ²	Professor of Geology and Mineralogy
PATRICK BEVERIDGE KENNEDY.....	Professor of Botany and Horticulture
PETER FRANDSEN.....	Professor of Zoölogy and Bacteriology
MILDRED MAUDE WHEELER.....	Instructor in German and Mathematics
SAMUEL BRADFORD DOTEN.....	Assistant Professor of Entomology
KATE BARDENWERPER.....	Instructor in Domestic Arts and Science
CHARLES T. BOYD ³	Professor of Military Science and Tactics
ROMANZO ADAMS.....	Professor of Education and Sociology
BERNARD ALFRED ETCHEVERRY.....	Associate Professor of Physics
JOHN ALLEN REID.....	Acting Professor of Geology and Mineralogy
IRVIN WILSON AYRES.....	Instructor in Public Speaking
CHARLES R. FITZMAURICE.....	Assistant in Chemical Laboratory
LOTTA SIBYL HOWE.....	Student Assistant in English
ADA E. MORSE.....	Student Assistant in Latin
MARGARET ESTELLE MAYBERRY.....	Student Assistant in Latin
MARY E. BACON.....	Student Assistant in Latin
EMILY BERRY.....	Student Assistant in English
Captain ROBERT MAURO BRAMBILA.....	Professor of Military Science and Tactics
KATHERINE LEWERS.....	Instructor in Freehand Drawing

AIM.

The aim of the College of Arts and Science is two-fold:

1. To lay a foundation for the professions, both learned and technical, and
2. To increase knowledge in and sympathy toward the broader and cultural aspects of life.

CONDITIONS OF ADMISSION.

1. Entrance to the College of Arts and Science shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

¹ Will be absent on leave 1905-6.

² Absent on leave in California as Carnegie Fellow in Geology.

³ Assigned to service as Major 4th Battalion Philippine Scouts, May, 1905.

2. High schools of other States, if accredited by a State University or other university of first rank, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition, whether from an accredited school or not. This examination will be held in September of each year.

ADMISSION REQUIREMENTS.

Subjects and Units.

GROUP I.

English	15 units ¹
Mathematics—Algebra, Geometry	15 units
Latin	15 units
Physics	5 units
History	10 units

GROUP II.

English	15 units
Mathematics—Algebra, Geometry	15 units
German or French	10 units
Physics	5 units
History	10 units
Elective	5 units

5 units French

GROUP III—ELECTIVES.

Latin	5 units
Physical Geography	2½ units
Chemistry	5 units
Botany	2½ or 5 units
Physiology	5 units
Zoölogy	5 units
Bookkeeping	2½ units

GROUP I admits to both schools.

GROUP II admits to the School of General Science.

GROUP III. From this group may be selected any subject or subjects for the five elective units in Group II.

SPECIAL STUDENTS.

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty

¹A unit, as the measure of the amount of work done, is represented by one recitation a week throughout the year, each recitation being of not less than thirty-five minutes duration. Fifteen units represent five recitations a week throughout three years; two and one-half units, a half year's work; ten units, two years' work

years of age. For adequate reasons exception to the above rule may be made by the Faculty.

A failure on the part of any special student to maintain a good standing in the special studies to which he is admitted will at once sever his connection with the University.

ADVANCED STANDING.

Advanced standing will be granted by the Committee on Admission only upon recommendation of the departments concerned.

REQUIREMENTS FOR THE BACCALAUREATE DEGREE.

The degree of Bachelor of Arts is conferred upon students in the School of Liberal Arts, and the degree of Bachelor of Science upon students in the School of General Science who have satisfactorily completed work aggregating 124 units credits. By an hour, or a unit credit, is meant the equivalent of work demanded by a lecture course meeting for one hour a week for one semester, or a laboratory course requiring two and one-half hours a week for one semester. The work of the first two years is in the main prescribed; that of the last two years is wholly elective, subject, however, to the rules of group and free electives. Students in the General Science course are required to take seven extra hours of Natural Science, as an equivalent of the Latin prescribed for students in the School of Liberal Arts. The work of the Freshman and Sophomore years is prescribed as follows:

<i>Classical Course.</i>		FRESHMAN YEAR.	<i>Science Course.</i>	
English	2	English	2	
Latin	4	French, Greek or German (E)	4	
Mathematics	3	Mathematics	3	
Physics	2	Physics	2	
French, Greek or German (E)	4	Chemistry	4	
Public Speaking	1	Public Speaking	1	
Drill or Physical Culture	1	Drill or Physical Culture	1	
SOPHOMORE YEAR.				
English	3	English	3	
Latin	3	French, Greek or German (E)	3	
History	3	History	3	
Natural Science	4	Natural Science	7	
French, Greek or German (E)	3	Drill or Physical Culture	1	
Drill or Physical Culture	1			

While the student should as nearly as possible follow the outline of hours and subjects as here prescribed, he may, with the sanction of his adviser, defer some of his prescribed work until the Junior or Senior year.

The Natural Science prescribed for the Sophomore year shall be elected from the following courses:

Chemistry 2 and 2a, Physics 2 and 3, Geology 1, Mineralogy 1, Zoölogy 1 and 8, Hygiene 1, and Botany 1. More advanced courses may be elected if the student has had the prerequisites. Students in the School of Liberal Arts intending to take a major in some science department in their Junior

and Senior years should elect an elementary course in that department in the Sophomore year. Some of the above-named courses give less than the four units credits required, but the deficiency may be satisfied by the election of additional hours either in the group or free electives.

JUNIOR AND SENIOR YEARS.

Provided all the work of the Freshman and Sophomore years has been completed as prescribed, courses aggregating 60 units credits, or an average of 15 units in each semester, should be completed during the Junior and Senior years. Of these 60 units, 40 must be chosen within certain correlated groups and with the advice and consent of the major, or major and minor, departments concerned. The remaining 20 units may be freely elected from any courses offered in the College of Arts and Science, provided that the requirements of the departments in which the work is elected are satisfied.

GROUP ELECTIVES.

Each student in the College of Arts and Science shall, at the beginning of his Junior year, elect a department in which he wishes to do a considerable amount of work as his major department. In case any student so choose he may elect a minor department also. If a student elects a major and not a minor department, he shall be required to elect forty hours work in the two years with the advice and approval of the head of his major department. The work of the major department shall be the correlating subject of the forty hours group electives. In case a student elects both a major and a minor department, the combined work of the two departments must represent a unity of aim, and the heads of the two departments shall constitute an advisory committee, of which the major professor shall be chairman. In this case, the elective group of forty hours must be selected with the advice and approval of the advisory committee.

Students in the School of Liberal Arts may select a major, or a major and minor, from any of the following departments: Greek, Latin, French, German, English, Spanish, History, Law, Economics, Sociology, Education, Zoölogy, Botany, Geology, Chemistry, Physics, Mathematics.

Students in the School of General Science may select a major, or major and minor, from any of the following departments: Zoölogy, Botany, Geology, Chemistry, Physics, Mathematics, Education.

The particular grouping will depend on the particular aim of the student. The following correlated groupings will serve as a general guide:

1	2
<i>Language—Literature Group.</i>	<i>Social Science Group.</i>
Greek, Latin, French, German, English.	History, Law, Economics, Sociology.
3	4
<i>Biological Science Group.</i>	<i>Physical Science Group.</i>
Zoölogy, Botany, Chemistry, Geology.	Chemistry, Physics, Mathematics, Geology.

The student electing a major in any one of the foregoing groups will be expected in the main to select his correlated work within that group. Good correlations, however, may sometimes be made by choosing from two groups. For example, a student making some one language his major may

find it desirable to also elect a considerable amount of History. A student planning to study medicine should elect a major from Group 3, but may find it desirable to take more work in Physics. Those intending to study law should elect a major in Group 2, but may find it desirable to take advanced work in English. In some cases it may be necessary also to utilize some of the free electives in courses correlated with the group. For example, students taking a science major will often find it profitable to have a good reading knowledge of both French and German. As an instance of uncorrelated grouping the following is given: Latin (major), History, Sociology, Chemistry.

Any student, after electing his major and minor departments, may, with the consent of the department concerned and with the consent of the Committee on Group Electives and Graduation Schedules, change his course, choosing another major department or major and minor departments, as the case may be, provided he comply with all the conditions in the case of the new major and minor departments.

Each student shall make a written statement of the work he has accomplished during the Freshman and Sophomore years and of the work he proposes to do under the direction of his major or major and minor professors during his Junior and Senior years. He shall also make a statement of the coördinating aim which gives unity to the proposed group. This statement shall be placed in the hands of the Committee on Group Electives and Graduation Schedules not later than the first week of the University year.

It shall be the duty of the Committee on Group Electives and Graduation Schedules to examine these statements carefully, and, if needs be, to interview the student presenting them and to determine whether such schedules conform to the rules governing the same. If they do thus conform they shall be approved, otherwise the discrepancy shall be pointed out and the student shall be directed again to consult with his major professor.

When any such group of electives has been approved by the Committee on Group Electives and Graduation Schedules it shall be considered as the work prescribed for graduation. Any student who shall complete the work of any such group together with work aggregating twenty hours credit, to be chosen freely within the prescribed groups of departments, shall be entitled to graduate. It shall be the duty of the committee to determine for each candidate for graduation whether he has completed such work. The committee shall act as a committee, the individual members having no authority outside of the committee.

FREE ELECTIVES.

Twenty hours, or an average of five hours in any one semester, may be freely elected from any of the foregoing courses offered, in the College of Arts and Science, provided only that the requirements of the departments concerned are satisfied. In addition to these courses, the student may elect from subjects offered by the Department of Domestic Arts and Science in the College of Agriculture courses which may be counted toward the degrees of B.A. or B.S., to an amount not to exceed one hour in any one semester nor four hours in all.

THESES.

A thesis must also be prepared in consultation with the major professor, and must show comparative originality and individual effort, scientific or literary knowledge, careful preparation, and good arrangement and presentation of subject.

THE ADVANCED NORMAL COURSE.

Students in the College of Arts and Science may be registered in the Normal School, Advanced Course, during their Junior and Senior years by electing courses in Education aggregating eighteen hours and Course 1 in music. Such students shall, in addition to the courses in Education, have a group of 30, instead of 40, hours and shall freely elect 12, instead of 20, hours; but in all other respects they will be subject to the above rules as to electives.

THE MASTER'S DEGREE.

The Master's Degree is conferred only upon students who, after receiving the Baccalaureate Degree, have pursued successfully work of an advanced character for at least one full academic year. Candidates who have received their Baccalaureate Degree at this University may receive permission to do one-half of their graduate work in some other college or university of high rank. A part of the required work is a thesis which must show capacity for independent research.

The degree of Master of Arts is conferred upon holders of the degree of Bachelor of Arts, and the degree of Master of Science upon holders of the degree of Bachelor of Science.

COURSES OF INSTRUCTION.

I. Greek.	IX. History.	XVII. Botany.
II. Latin.	X. Law.	XXII. Domestic Arts.
III. French.	XI. Economics.	XXIII. Geology.
IV. Spanish.	XII. Sociology.	XXV. Chemistry.
V. German.	XIII. Education.	XXVI. Physics.
VI. English.	XIV. Psychology.	XXVII. Mathematics.
VII. Music.	XV. Zoölogy.	XXXII. Drawing.
VIII. History of Art.	XVI. Hygiene.	XXXIII. Military.

*More prominent heading -
do not schedule under
each college.*

I. GREEK LANGUAGE AND LITERATURE.

Greek 1. Beginning Greek. Thorough drill in the elements of the Greek language with a liberal amount of reading in Xenophon and Herodotus. *Gleason and Atherton: First Greek Book. Goodwin: Selections from Xenophon and Herodotus. Freshmen. Both semesters, M. W. Th. F.* (B 4)

Greek 2. The Iliad or Odyssey. The reading of Homer's Iliad or Odyssey, accompanied throughout the year by methodical instruction in Greek Grammar, Greek Prose Composition, and History of Ancient Greeks. *Goodwin: Greek Grammar. Allison: Greek Prose Composition. Pennell: History of Ancient Greece. Sophomore. Both semesters, M. W. F.* (.....3)

Greek 3. Lysias and Plato. A critical reading of the orations of Lysias and Plato's Apology of Socrates as a preparation for an appreciative study of Greek civilization. *First semester, M. W. F.* (.....3)

Greek 4. Æschylus. The Prometheus Bound of Æschylus, and lectures on the orators and dramatists of Greece. *Second semester, M. W. F.* (.....3)

Greek 5. Euripides and Sophocles. Exposition of the Greek drama. The Alcestis of Euripides and the Electra of Sophocles. *First semester, M. W. F.* (.....3)

Greek 6. Greek Testament. Critical reading of the Gospel of St. John, with lectures on the common dialect and on Hellenistic Greek. *Second semester, M. W. Th. F.* (.....4)

II. LATIN LANGUAGE AND LITERATURE.

Latin 1. Vergil. The Æneid, Mythology, Sight Reading. The critical study of the first six books, supplemented by a brief survey of the remainder to emphasize the unity of the poem. *Comstock:* The Æneid of Vergil. *Gayley:* Classic Myths. *Painter:* Elementary Guide to Literary Criticism. *Freshmen. Both semesters, M. W. Th. F.* Professor Church. (E 4)

Latin 2. Cicero. De Senectute, Prose Composition. *Bennett:* Cicero Cato Major De Senectute. *Miller:* Latin Prose Composition, Part II. *Johnston:* Private Life of the Romans. *Sophomores. First semester, M. W. F.* Professor Church. (B 3)

Latin 3. Horace, Catullus, Tibullus. Selected from poems of Horace, Catullus, and Tibullus. Roman Literature, Sight Reading. *Bennett:* Horace, Odes and Epodes. *Crowell:* Selections from Catullus. *Fowler:* History of Roman Literature. *Franklin and Greene:* Selections from Latin Prose Authors. *Sophomores. Second semester, M. W. F.* Professor Church. (B 3)

Courses 1-3 will be required for the Degree of Bachelor of Arts.

Latin 4. Comparative Pastoral Poetry. A study of the development of pastoral poetry in Greek, Latin, English, and American literature. *Andrew Lang:* Theocritus, Bion, and Moschus. *Jerram:* Vergil, Bucolics. *Chambers:* English Pastorals. *First semester. Hours to be arranged.* Professor Church. (.....3)

Latin 5. Comparative Comedy. A study of the elements of the comic drama in the best periods of its development. *Moulton:* Ancient Classical Drama. *Woodbridge:* The Drama, Its Law and Technique. *Rogers:* Metrical Translation of the Frogs of Aristophanes. *Drake:* Translation of Plautus, Menaechmi, or the Twin Brothers. *Sloman:* Terence, Phormio, the Insolent Schemer. *Shakespeare:* Comedy of Errors. *Fielding:* The Mock Doctor. (This course will be continued by the study in the department of French of *Molière's* Les fourberies de Scapin, and *Racine's* Les Plaideurs.) *Second semester. Hours to be arranged.* Professor Church. (.....3)

Latin 6. Roman Satire. A study of the times and satires of Lucilius, Horace, and Juvenal with some consideration of the development of Roman satire and its influence on the English satirists. *Merrill:* Fragments of Roman

Satire. *Moore:* Odes and Epodes of Horace. *Martin:* Translation of Horace. *Conington-Nettleship:* Satires of Persius. *Pearson & Strong:* Thirteen Satires of Juvenal. *Leeper:* XIII Satires of Juvenal. *Both semesters. Hours to be arranged.* Professor Church. (.....3)

Latin 7. The History of the Development of the Latin Language. *Lindsay:* Latin Inscriptions. *Buecheler:* Carmima Latina Epigraphica. *Second semester. Hours to be arranged.* Professor Church. (.....1)

Latin 9. Roman Life in Latin Prose and Verse. *Peck and Arrowsmith:* Roman Life in Latin Prose and Verse, supplemented by standard works on Roman antiquities. *Second semester. Hours to be arranged.* Professor Church. (.....1)

Latin 10. Lectures on Greek and Roman Art. *Second semester, T. Th.* Professor Church. (C 2)

Latin 12. Comparative Epic Poetry. A study of the Iliad, Odyssey, Æneid, Divina Commedia, Paradise Lost, with some consideration of the Poems of Ossian and the Niebelungen Lied for the purpose of learning the general development of epic poetry and becoming familiar with its local peculiarities. *Bryant:* The Iliad. *Butcher and Lang:* The Odyssey, The Æneid. *Longfellow:* Divina Commedia. Paradise Lost. Poems of Ossian. *Lettsom:* Niebelungen Lied. *Both semesters, M. W. F.* Professor Church. (.....3)

Latin 20. Seminary in connection with baccalaureate thesis work. *Both semesters.* Professor Church. (.....1)

III. FRENCH LANGUAGE AND LITERATURE.

French 1. Elementary French. Thorough drill in grammatical principles and facility in translating simple English into French, and French into English. *Fraser and Squair:* French Grammar. *Rollins:* French Reader. Selections of French poetry are committed to memory. *Freshmen. Both semesters, M. T. Th. F.* Associate Professor de Laguna. (D 4)

French 2. Translation and Composition. The study of French grammar is continued, special stress being placed on the subjunctive, and various idiomatic constructions. The texts read differ each year. In 1905-6, About's *Mère de la Marquise*, Dumas' *La Tulipe Noire*, Lamartine's *Jeanne d'Arc*, Fontaine's *Douze Contes Nouveaux*, and some historical or scientific French will be read. *François:* French Composition. *Prerequisite:* French 1, or open to those who have completed two year's work in a high school. *Both semesters, M. W. F.* Associate Professor de Laguna. (C 3)

French 3. French Dramatists. The principal plays of Molière, Racine, and Corneille are read, together with Hugo's *Hernani*, and Rostand's *Cyrano de Bergerac*, or other modern French drama. Synopses of the plays, or critical essays, written in French, are required for each drama read. French Prose Composition. *Duval:* *Histoire de la littérature française.* *Prerequisites:* French 1 and 2. *Both semesters, M. W. F.* Associate Professor de Laguna. (A 3)

French 4. Modern French Poetry and Prose. This course has been arranged to alternate with the course in French Dramatists. It includes

rapid reading of French Lyrics, Prose Stories, and Essays, together with some of the latest French plays. French prose composition. Essays in French at stated intervals on the works studied. *Prerequisites:* French 1 and 2. *Both semesters, M. W. F. Given in 1906-7.* Associate Professor de Laguna. (A 3)

French 20. Seminary in connection with baccalaureate thesis work. Old French: Grammar, phonetics, morphology, syntax. Reading: *Chanson de Roland*; *Chrétien de Troyes*; *Chevalier au Lion*. *Both semesters.* Associate Professor de Laguna. (.....1)

IV. SPANISH LANGUAGE AND LITERATURE.

Spanish 1. Beginning Spanish. The course in Spanish has been laid out for those students who have had at least two years' work in French and two or more in Latin, thus making rapid progress possible. *Hills and Ford:* A Spanish Grammar. *Matzke:* First Spanish Readings. As much time as can be spared from text-book work is devoted to Spanish conversation. *Elective.* *Prerequisites:* Two years of Latin and two of French, or an equivalent. *Both semesters, T. Th.* Associate Professor de Laguna. (B 2)

Spanish 2. Advanced Spanish. Modern Spanish novels and plays by standard authors. *Le Sage:* *Gil Blas*. *Prerequisite:* Spanish 1. *Both semesters, T. Th.* Associate Professor de Laguna. (C 2)

V. GERMAN LANGUAGE AND LITERATURE.

German 1. Elementary Course. The aim of the first year's work is to give a thorough drill in grammatical principles, together with copious readings of easy German texts, and exercises in German Composition. *Collar:* *Eysenbach*. *Hewett:* A German Reader. *Volkman:* *Kleine Geschichten*. *Baumbach:* *Waldnovellen*. *Freshmen.* *Both semesters, M. T. Th. F.* Instructor (D 4)

German 2a. Schiller. In this course the best known of Schiller's plays are studied from a historical and literary standpoint, and the drill in grammar is continued by means of exercises in Prose Composition. *Schiller:* *Maria Stuart*, *Die Jungfrau von Orleans*. *Wesselhoeft:* German Exercises in Conversation and Composition. *Prerequisite:* German 1, or open to those who have completed two years of German in the High School.

German 2b. Goethe, Lessing, Heine. *Goethe:* *Iphigenie*. *Lessing:* *Nathan der Weise*. *Heine:* *Die Harzreise*. These works are read with a view to developing the understanding and appreciation of the variety and difference in style and thought of the authors. *Wesselhoeft:* German Exercises in Conversation and Composition. *Prerequisite:* German 1, or open to those who have completed two years of German in a high school. *Second semester, M. W. F.* Instructor (C 3)

German 3. *Goethe:* Torquato Tasso, and Faust, Part I. The history and development of the Faust Legend is studied, and the ethical and philosophical questions are discussed. A detailed study of the life of Goethe is part of this course. Two German papers are required: A synopsis of Torquato Tasso, and a characterization of Faust. The history of German literature is begun with *Bernhardt's Deutsche Literaturgeschichte* as the

basis for the work. German Prose Composition continues throughout the year. *Prerequisites:* German 1, 2a, and 2b. *Both semesters, M. W. F. Given in 1906-7.* Associate Professor de Laguna. (B 3)

German 4. History of German Literature. *Keller's Bilder aus der Deutschen Litteratur* is read at sight. A special study is made of German lyrics, including those of the Nineteenth Century. German Novels of the Nineteenth Century are read in class and out, and critical papers concerning them are written in German. Prose Composition is continued throughout the year. *Prerequisites:* German 1, 2a, and 2b. *Both semesters, M. W. F.* Associate Professor de Laguna. (B 3)

German 20. Seminary in connection with baccalaureate thesis. *Niebelungen Lied* or *Walther von der Vogelweide* will be interpreted. *Both semesters.* Associate Professor de Laguna. (.....1)

VI. ENGLISH LANGUAGE AND LITERATURE.

English 1. Composition and Rhetoric. Narration, exposition, description, argumentation. *Carpenter and Brewster: Modern English Prose. Hill: Foundations of Rhetoric. Freshmen, both schools. Both semesters, M. W. F.* Professor Cushman. (B 2)

English 2. Public speaking. The general theory of speech-making. Lectures and recitations. Practice, with instruction, in the debate, the oration, toasts, and occasional addresses. *Pittinger: How to Become a Public Speaker. Freshmen, both schools. Both semesters, T. Mr. Ayres.* (A 1)

English 3. Forensics. Original investigation in recent history and sociology. Oral discussion. Practice in argumentation and delivery. *Elective. Prerequisites:* English 1 and 2. *Both semesters. Hours to be arranged. Given in 1906-7.* Professor Cushman. (.....2)

English 4. General History of English and American Literature. Recitations and assigned readings. *Newcomer: English Literature. Newcomer: American Literature. George: From Chaucer to Arnold, Types of Literary Art in Prose and Verse. Sophomores, both schools. Both semesters, M. W. F.* Professor Cushman. (A 3)

English 5. Literature of the Nineteenth Century.

I. Poetry. From Wordsworth to Swinburne. *Page: British Poets of the Nineteenth Century.*

II. Prose. From Lamb to Kipling.

Sections I and II will be given in alternate years. Elective. Prerequisites: English 1 and 4. *Both semesters, T. Th.* Professor Cushman. (C 2)

English 6. Shakespeare. The reading and interpretation of representative plays of Shakespeare. *Elective. Prerequisites:* English 1 and 4. *Both semesters, M. W. F.* Professor Cushman. (E 3)

English 8. Literary Criticism. *Mabie: Short Studies in Literature. Johnson: The Elements of Literary Criticism and Forms of English Poetry. Elective. Both semesters, T. Th.* Professor Cushman. (A 2)

English 9. Anglo-Saxon. Grammar, composition, and the reading of

simple prose and verse. *Smith: Old English Grammar. Elective. Both semesters. Hours to be arranged. Given 1906-7. Professor Cushman. (.....3)*

English 20. Seminary for theses. Topic: Technique of the Drama. *Prerequisite: English 6. Both semesters. Hours to be arranged. Professor Cushman. (.....1)*

VII. MUSIC.

Music 1. Vocal Music. Systematic instruction in the elements of vocal music is given. *Both semesters, T. Th. Hours to be arranged. Mrs. Layton. (.....)*

VIII. HISTORY OF ART.

History of Art 1. The development of art with special reference to painting is briefly traced from its beginnings to the Renaissance. The lives and work of the great masters of the Fifteenth, Sixteenth, and Seventeenth Centuries will then be especially considered, with a view not only to establishing some principles of art criticism, but to understanding life and history so far as art is the interpreter. As far as possible, the works of the masters will be studied from photographs and lantern slides of the originals. Lectures. *Elective. Both semesters. Hours to be arranged. Not given in 1905-6. Miss Martin. (.....)*

IX. HISTORY AND POLITICAL SCIENCE.

History 1. Mediæval History from the Fourth to the Fifteenth Century. Beginning with the history of the Barbarian invasion, it traces the development of primitive Germanic institutions, the rise of the mediæval church and the papacy, the expansion of the Frankish Empire, the establishment of feudalism, the formation of modern states, the important features of the Renaissance, and the beginning of the Reformation. Special stress is laid on the study of forces and of the great world movements with the aim of giving the proper perspective for the appreciation of modern history. *Sophomores. Both semesters, M. W. F. Associate Professor Wier. (E 3)*

History 3. History of England to 1485 covers the period of prehistoric and Roman Britain and the English settlements through the growth of the English Kingship and the development of the Parliamentary Constitution to 1485. The character of the work will render desirable previous training in history on the part of the student. This course is important as a preparation for the study of law. *Elective. Both semesters. Hours to be arranged. Associate Professor Wier. (.....2)*

History 5. Constitutional and Political History of the United States, 1775-1840. A detailed study of the political and constitutional questions arising during the period of the formation of the Union. *Elective. Both semesters. Hours to be arranged. Associate Professor Wier. (.....3)*

History 9. French Revolution, with special reference to its causes and constitutional experiments. Studied from the European and American standpoint rather than as a French local crisis. The general preparation for the Revolution is traced and its far-reaching results in the establishment of the New Regime is studied in detail, while minor attention is given to the active manifestation of the revolution in France. *Elective. Both semesters. Hours to be arranged. Given in 1906-7. Associate Professor Wier. (.....3)*

History 10. History of the Pacific Slope. An investigation course giving training in seminary methods. Gives comprehensive knowledge of the development of the Pacific Slope during the Spanish, Mexican, and early American periods. Steady progress of the Atlantic Coast colonies is compared with the inaction of the Spanish on the Pacific, and causes investigated for the difference in attitude toward colonization shown by the various European powers as likewise differences in nature of colonists. *Elective. Both semesters. Hours to be arranged. Given in 1906-7.* Associate Professor Wier. (.....3)

History 11. Nineteenth and Twentieth Century History. A comparative study of the main events of recent history. *Elective. Both semesters. Hours to be arranged.* Associate Professor Wier. (.....1)

History 20. Special Courses. May be arranged for graduate students to meet individual needs. Research work may thus be carried on under guidance of the department. Associate Professor Wier. (.....)

REMARK—Thesis work is usually required in connection with each course. Such thesis embodies the results of independent work in the investigation of some special topic.

X. LAW.

Law 1. Elementary Law and Jurisprudence. An exposition of the leading principles underlying the Common Law in the light of Jurisprudence. *Elective. First semester, M. W. F.* President Stubbs. (D 3)

Law 2. International Law. The principles of International Law as seen by the leading text writers of America, England, Europe, and the Continent. *Scott's Cases*, and other authorities. *Elective. Second semester, M. W. F.* President Stubbs. (D 3)

Law 3. Advanced Law. The object of the course is to give the citizen a broader view than that outlined in the above courses, and in some specialty, such as the law of property, evidence, etc. *Hopkins: Law of Property. McKelvey: Evidence. Elective. Prerequisites: Law 1 and 2. Both semesters, M. W. F.* Professor Lewers. (D 3)

XI. ECONOMICS.

Economics 1. Political Economy. The Elements of Political Economy. Recitations on the text, lectures, and assigned readings. *Walker: Political Economy*, or some equivalent. *Elective. Both semesters, M. W. F.* Professor Lewers. (B 3)

Economics 2. Financial History of the United States. A detailed study of the experiences and legislation of the United States touching currency, coinage, and banking. The study will be founded, as far as possible, on examination of original sources. *Prerequisite: Economics 1. Elective. Both semesters, M. W. F.* President Stubbs. (C 3)

XII. SOCIOLOGY.

[With the exception of Course 20, no course in sociology will be given unless elected by at least four students.]

Sociology 1. Introduction to the Study of Society. The purpose of

this course is to present the whole social process as a unity. The demand is not so much for detailed knowledge as for a correct point of view. Society is regarded as organic and evolutionary. The fundamental social institutions and their functions are studied, and their development through savagery, barbarism, and civilization is considered. The point of view of the course is used to interpret historic social progress. *First semester, M. W. F.* Professor Adams. (A'3)

Sociology 2. Social Problems. The aim of this course is to present a number of present-day problems from the point of view of Course 1. Among the problems are the labor problem, socialism, race problems, problems of the city, problems of rural communities, crime, pauperism, sanitation, etc. Not all of these subjects will receive attention during any one semester, but the course will include a number of them selected according to the interest of the class. *Second semester, M. W. F.* Professor Adams. (A 3)

Sociology 3. Primitive Society. The physical and mental characteristics of primitive man are considered in relation to the type of social organization. An attempt is made to account for the influence of custom, for the development of the various types of family, for the origin of political institutions, and of the institution of property. Some attention may be given to primitive religious customs and ideas, and to the development of morality. As the field covered by this course is very broad, it is probable that the course will be varied from year to year, only a part of the subjects being taken up in any one course. Students, in their reading, may concentrate attention upon some one aspect of primitive life, choosing according to interest. Students capable of such work will be encouraged to study our native Indian society, both through the literature supplied by the library and through direct observation. *Second semester, M. W. F.* Professor Adams. (C 3)

Sociology 20. Research Course. Students choosing Sociology for a major subject will choose a thesis subject near the beginning of the Senior year, and carry on reading and research work during both semesters. Arrangements will be made in each case for consultations and reports during the year. *Both semesters. Hours to be arranged.* Professor Adams. (.....1)

XIII. EDUCATION.

Education 4. Practice Teaching. Each student taking Education 8 is required to devote four weeks to observation and teaching in the public schools of Reno under the direction of the Professor of Education and the Principal of Schools. This work is preceded by preparation consisting of a study of the Reno course of study and of lesson planning. *One month, second semester.* Professor Adams. (.....3)

Education 5. The Logic of Education. This course is designed to acquaint the student with the logical nature of the teaching process. The aim of teaching being given, what are the steps logically necessary to the realization of the desired end? What are the steps necessary to the notion of the individual? What are the steps essential to the development of the general notion? What are the forms of inference, and what are the steps in each case? Lesson plans exemplify the logical order of procedure in pre-

senting the various sorts of subject-matter. As much psychology as is necessary to the purpose of this course is included in the lectures. *First semester, T. Th. F.* Professor Adams. (B 3)

Education 6. Child study. This course is designed to do two things: (1) To stimulate students to an intelligent and sympathetic observation and interpretation of the activities of children and to acquaint them with the results of scientific investigations as to their physical and mental development; and (2) to consider the aim, matter and method of education as determined by the child's needs at each stage of development. The course in psychology must precede this or be taken at the same time. *Second semester, T. Th. F.* Professor Adams. (B 3)

Education 7. History of Education. The aim of this course is to present education from a social point of view. Savage, barbarian, and ancient education are presented briefly by way of introduction, but chief attention is given to the modern period. In each case emphasis is placed upon the relation of the educational system to the type of social organization. Our own educational system is criticized as a product, in part, of the demands of older social conditions, and the need of readjustment to meet present demands is pointed out. *First semester, M. T. W. Th.* Professor Adams. (C 4)

Education 8. Educational Values and Methods. In this course attention is given to the more immediate problems of school work. The course of study for elementary and secondary schools is considered from the standpoint of the child as an individual and as a future American citizen. An attempt is made to point out the values of each of the subjects ordinarily studied in public schools and to discover the methods of teaching and study that are best designed to realize these values. *Second semester, M. T. W. Th.* Professor Adams. (C 4)

XIV. PSYCHOLOGY.

Psychology 1. General Psychology. Lectures, reports, quizzes, and an occasional laboratory exercise. Special attention is given to the relation between the nervous and mental processes. The course is primarily intended to form a psychological basis for the advanced courses in education. *Prerequisite:* Hygiene 1, or equivalent. *Second semester, M. W. F.* A further lecture or laboratory period will be arranged for. Professor Frandsen. (E 4)

XV. ZOÖLOGY.

Zoölogy 1. General Zoölogy. An introduction to the whole field of zoölogy; the systematic positions and relations of animals, the differentiation of complex systems of tissues and organs from the simple; the activities, habits and adaptations of animals, the main facts of development, the theory of evolution, etc. In the laboratory a number of animal types are studied, beginning with the simplest and proceeding to the most highly organized. *First semester, T. Th.* Professor Frandsen. (C 2) (Lab. 2)

Zoölogy 2. Comparative Anatomy and Physiology of Vertebrates. Lectures on the progressive development of structures and functions from the lower to the higher vertebrates. In the laboratory the student will make

dissections of the trout, frog, lizard, rabbit, pigeon, or allied forms. This course is designed as a foundation for the subsequent study of human anatomy in the medical school. Such a foundation is now required for entrance by some of the leading medical schools. It is also intended for those who plan to teach zoölogy or human anatomy in the high school and as a preparation for research work in anatomy. *Prerequisite:* Zoölogy 1. *Both semesters, M. W. F.* Professor Frandsen. (A 3) (Lab. 2)

Zoölogy 3. Histology. The methods of killing, fixing, sectioning, staining, and mounting of objects for microscopic study. The lectures will deal mainly with vertebrate, particularly human histology, but the course may be varied in different years. In the laboratory the student may choose either some invertebrate or vertebrate form for study. *Prerequisites:* Zoölogy 1, 2, and Hygiene 1. *First semester, T. Th.* Professor Frandsen. (B 2) (Lab. 2)

Zoölogy 4. Embryology. Lectures on comparative embryology. The laboratory work consists mainly of the preparation and study of sections of the frog or chick at successive stages of development. *Prerequisites:* Zoölogy 1, 2, and 3. *Second semester, T. Th.* Professor Frandsen. (A 2) (Lab. 2)

Zoölogy 6. General Entomology. Lectures on the habits and transformations of our most interesting insects with the characteristics of the orders, sub-orders, etc. *One period of laboratory work. Elective. Prerequisite:* Zoölogy 1. *Second semester, T. Th.* Assistant Professor Doten. (D 2) (Lab. 1)

Zoölogy 7. Economic Entomology. Lectures and field work on our dangerous insect pests. Discussions of their life histories and the best means of combating them. *Sophomores. Agriculture. First semester. Hours to be arranged.* Assistant Professor Doten.

Zoölogy 8. Evolution. Lectures illustrated by lantern slides on the evidences of organic evolution and its bearing upon science and life in general. *Second semester. Hours to be arranged.* Professor Frandsen.

Zoölogy 20. Research Course. Students electing Zoölogy as a major will be required to select a thesis subject in the early part of the Senior year. A number of subjects selected from the different lines of zoölogical research, anatomy, physiology, histology, and embryology will be submitted to the choice of the student. If desired, a student may elect thesis work in excess of the minimum one unit required. *Consultation hours to be arranged with the student. Both semesters.* Professor Frandsen.

XVI. HYGIENE.

Hygiene 1. Human Anatomy, Physiology, and Hygiene. Special attention will be given in the second semester's work to the subject of Hygiene, including personal hygiene, the hygiene of contagious diseases, emergencies, etc. The laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion and the dissection of some vertebrate. *Both semesters, M. W. F. Laboratory, Friday 1-4.* Professor Frandsen. (D 3)

Hygiene 2. General Bacteriology. Morphology and classification of bacteria. Methods of making cultures and studying the life processes of bac-

teria. Fermentation, putrefaction, etc., and their importance in the economy of nature. Pathogenic bacteria. Methods of disinfection, etc. In the laboratory, the student will learn how to obtain pure cultures of some of the common bacteria in the air, water and soil, and how to make slide preparations of them. A final study may be made of some pathogenic form. *Prerequisite:* Botany 1. *Students wishing to take this course must first secure written permission from the instructor in charge.* Second semester, T. Th. Professor Frandsen. (B 2) (Lab. 2)

XVII. BOTANY.

Botany 1. Structural and Physiological Botany. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Two lectures and two laboratory periods a week. Illustrated by lantern slides and demonstrations. *Sophomores.* Second semester, T. Th. Professor Kennedy. (D 2) (Lab. 2)

Botany 2. Cryptogamic Botany. A general résumé of plant life from the lowest to the highest forms; slime moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horsetails, club mosses, conebearers, and flowering plants. Special attention is given to the plants in each group of economic importance. Two lectures and two laboratory periods a week illustrated by lantern slides. Second semester, W. F. Professor Kennedy. (D 2) (Lab. 2)

Botany 3. Comparative Histology of Plants. The student will be introduced to methods of investigation, including the use of the microtome and the preparation of microscopic slides. Preliminary studies of the vegetable cell and its contents. Kinds of tissues. Microscopic structure of stems, roots, leaves, and floral organs. *Prerequisite:* Botany 1 or 2. Second semester, T. Th. Professor Kennedy. (D 2)

Botany 4. Taxonomy and Phylogeny of the Angiosperms. A study of the genetic relationship of the phanerogamous orders with practical studies in the laboratory relative to the flora of Nevada. *Prerequisite:* Botany 1, or its equivalent. Both semesters, M. W. F. Professor Kennedy. (D 3)

Botany 20. Research. This State offers a new and inviting field for investigation in botanical and horticultural science and in forestry. The flora of the State is but little known, leaving ample opportunity for original research work during the summer months in collecting material for taxonomic or histological study in the laboratory. *Students who have taken two of the Courses 1, 2, 3, or 4 in Botany, may, after consultation with the instructor, be assigned special problems suitable for thesis work. Hours to be arranged.* Professor Kennedy. (.....1)

XXII. DOMESTIC ARTS AND SCIENCE.

Domestic Science 10. Talks on textiles with lectures on hygienic and historic dress. *Hours to be arranged.* Miss Bardenwerper. (.....1)

Domestic Science 11. Studies in color and design in relation to dress and costume. *Hours to be arranged.* Miss Bardenwerper. (.....1)

Domestic Science 12. Lectures on harmony in outline and color. *Hours to be arranged.* Miss Bardenwerper. (.....1)

Domestic Science 13. Lectures on the choice of design, color, and material in articles for home decoration. *Hours to be arranged.* Miss Bardenwerper. (.....1)

Domestic Science 14. Food values discussed from a dietetic standpoint. *Hours to be arranged.* Miss Bardenwerper. (.....1)

Domestic Science 15. Preparation of menus in accordance with dietetic and economic standards, balanced rations, esthetics of serving. *Hours to be arranged.* Miss Bardenwerper. (.....1)

Domestic Science 16. History of cookery. *Hours to be arranged.* Miss Bardenwerper. (.....1)

Domestic Science 17. Food adulterations. Development of odors and flavors. Dietetic errors. *Hours to be arranged.* Miss Bardenwerper. (.....1)

Domestic Science 18. Household economics. *Hours to be arranged.* Miss Bardenwerper. (.....1)

XXIII. GEOLOGY.

Geology 1. Dynamic and Structural. Illustrated lectures. *First semester, M. W. F.* Professor Louderback. (D 3)

Geology 2. Petrography. The nature, origin, and distinctive properties of rocks. *Prerequisites:* Mineralogy 1 and Geology 1. *Second semester, M. W.* Professor Louderback. (D 2)

Geology 3. Geological Laboratory. Supplementary to Geology 2. The study of rocks by microscopic methods. *Second semester, M.* Professor Louderback. (Lab. 1)

Geology 4. Geological Laboratory. Continuation of Geology 3. The study of rocks and minerals by microscopic methods. *Prerequisites:* Geology 1, 2, 3 and Mineralogy 1, 2, 3, 4. *First semester, M.* Professor Louderback. (Lab. 1)

Geology 5. Field Geology. A practical study of field methods and their application to the formations in the vicinity of the University, with practice at map reading and plotting of results. *Prerequisites:* Geology 1, 2, 3, and 6 (may be taken simultaneously); ten days of actual satisfactory field work during the second term. *Second semester, M.* Professor Louderback. (Lab. 1)

Geology 6. Historical Geology. An outline of the history of the earth, as written in the rocks of the crust and the topographic forms of the surface; with the distinctive characteristics of the rocks of the different geological periods, especially in Western America. *Prerequisite:* Geology 1. *First semester, T. Th.* Professor Louderback. (A 2)

Geology 7. Economic Geology. A discussion of the nature and origin of ore and other economic deposits, and a study of their mode of occurrence in typical and important mining regions. *Prerequisites:* Geology 1, 2, 3, 4, 5, and 6. *Second semester, T. Th.* Professor Louderback. (A 2)

Geology 20. Research work. This State, even in the vicinity of the University, offers a particularly open and inviting field of investigation in all the branches of geological science—physiography (physical geography), petrography, and glacial, stratigraphic and economic geology. The work may consist of: 1. The study of some special geological problem, or of the geology of some special district in the field, and the preparation of results. 2.

The investigation of special problems, or the study of material gathered in the field, by chemical or microscopical laboratory methods. 3. Critical reading and discussion of important scientific economic monographs, and of current geological literature. *Hours to be arranged.* Professor Louderback.

XXV. CHEMISTRY.

Chemistry 1. General Chemistry. Lectures and recitations on the theories and principles of chemistry, with special reference to their applications to practical work. Technical processes receive much attention, and the latest developments of chemical theory are discussed. Stoichiometrical calculations are made a feature of this course. *Hinds:* Inorganic Chemistry. (For supplementary reading the works of *Remsen*, *Ostwald*, etc., are recommended.) *Freshmen.* Both semesters, T. Th. Professor Wilson and Mr. Fitzmaurice. (B 3)

Chemistry 1a. General Chemistry (Laboratory). Laboratory manipulations, study of reactions and chemical preparations. Text: Some standard manual supplemented by individual assignments. *First half of first semester.*

Qualitative Analysis (Laboratory). The reactions of the more important elements are thoroughly studied, and the methods of their separation in mixtures of varying complexity are taught. This course begins with the analysis of simple compounds and extends to the analysis of complex substances, such as ores, minerals, and alloys. Effort is made to inculcate the proper methods of manipulation and to avoid mechanical work. All reactions are required to be written as they occur and the notes to be carefully and neatly kept and handed in for correction. A feature of the course is the frequent quiz, either oral or written, together with a full explanation of the theory of analysis. *Medicus:* Qualitative Analysis (Marshall's Translation). *Sharwood:* Scheme of Separation. *Freshman Science.* Second half of first semester and all of second semester, Th. F. S. Professor Wilson and Mr. Fitzmaurice. (Lab. 3.)

Chemistry 2. General Chemistry (Lecture Course). Lectures on the essentials of chemistry, non-metals, metals, and carbon compounds; theoretical and descriptive. *Hessler and Smith:* Essentials of Chemistry. Both semesters, T. Th. Professor Wilson. (C 2)

Chemistry 2a. General Chemistry (Laboratory). Laboratory manipulations, studies of reactions and chemical preparations. Text: Some good manual; no single text is used. Individual assignments. This course is supplemental and incidental to Course 2. Both semesters, Th. F. Professor Wilson and Mr. Fitzmaurice. (Lab. 2)

Chemistry 3. Lectures and recitations on the Theory of Analytical Work and the Calculations of Analytical Chemistry. *Ostwald:* Scientific Foundations of Analytical Chemistry. *Miller:* Calculations of Analytical Chemistry. *Prerequisites:* Course 1 and 1a. All quantitative students. Both semesters, T. Professor Wilson. (B 1)

Chemistry 3a. Quantitative Analysis (Laboratory Course). A very thorough and comprehensive course covering the gravimetric determination of the components of simple substances: limestone, feldspar, coal, ores of

the common metals, acidimetry and alkalimetry, and volumetric analysis. Special attention is given to manipulation. After the general course as outlined is completed, individual assignments are made, according to the school in which the student wishes to take his degree. *Talbot: Quantitative Analysis.* (References: *Cairn's* Fresenius and *Sutton's* Volumetric Analysis.) *Sophomores. Both semesters, M. T. W.* Professor Wilson and Mr. Fitzmaurice. (Lab. 3)

Chemistry 4. Organic Chemistry (Lecture Course). Theoretical and descriptive. Special reference to the practical application of the chemistry of the carbon compounds. *Perkin and Kipping. Remsen. Prerequisite: Chemistry 1 or 2. Both semesters, M. T.* Professor Wilson. (C 2)

Chemistry 4a. Organic Chemistry (Laboratory). Studies of organic substances and preparations of the simpler organic compounds. Text: Some standard laboratory manual. *Hours to be arranged.* Professor Wilson. (Lab. 2)

Chemistry 20. Advanced Courses. *Elective in Sophomore or Junior years, when the prerequisites have been completed. Hours to be arranged.* Professor Wilson.

XXVI. PHYSICS.

Physics 1. Physical Laboratory. A series of more or less careful quantitative experiments intended to give the student a practical knowledge of the fundamental laws of Physics, and to introduce him to careful quantitative measurement. Care, neatness, exactness, and close scientific reasoning are the characteristic features of the work. *Freshmen, both schools. Both semesters, two afternoons.* Professor (Lab. 2)

Physics 2. General Physics. Lectures and recitations with experimental illustrations and problems. Properties of matter, heat, magnetism, and electricity. *Elective. Both semesters, M. W. F.* Professor (B 3)

Physics 3. Physical Measurements. Experimental work requiring quantitative results. Most of the experiments are electrical experiments. *Elective. Both semesters, two afternoons.* Professor (Lab. 2)

XXVII. MATHEMATICS.

Mathematics 1a. College Algebra. Begins with quadratic equations, and includes the progressions, proportion, variation, the Binomial Theorem with applications, and logarithms. *Freshmen, both schools. First semester, M. W. F.* Professor (A 3)

Mathematics 2a. Solid Geometry and Plane Trigonometry. The geometry of the plane, the cylinder, the cone, the prism, the pyramid, and the sphere. The trigonometry includes the elementary ideas concerning the trigonometrical functions and their relations to each other and the solution of plane triangles. *Freshmen. Both schools. Second semester, M. W. F.* Professor (A 3)

Mathematics 3. Spherical Trigonometry. The methods of solution of all classes of spherical triangles and the application of spherical trigonometry to the elementary problems of the astronomy of the earth. *First semester, M. T. W. Th. F. for six weeks.* Professor (B 5)

Mathematics 4. Analytic Geometry. The straight line and the circle. This follows Course 3 during last ten weeks of the first semester. *First semester, M. T. W. Th. F. for ten weeks.* Professor (B 5)

Mathematics 5. Analytical Geometry. The geometry of the parabola, the ellipse, the hyperbola, and of some of the curves of higher degree. *First eight weeks of second semester, M. T. W. Th. F.* Professor (B 5)

Mathematics 6. Differential Calculus. Methods of differentiation of the different classes of functions and of the application of the calculus to expansions of functions, development of equations of tangents and normals, curve tracing, maxima and minima. *Sophomores. Second semester, last ten weeks. M. T. W. Th. F.* Professor (B 5)

Mathematics 7. Integral Calculus. Methods of integration of functions, the application of the calculus to finding areas of surfaces, lengths of curves, volumes of solids, moment of inertia. *First semester, M. W. F.* Professor (C 3)

XXXII. DRAWING.

Drawing 11. Drawing from the antique and from nature; outdoor sketching; historical ornament; conventionalization; harmony of color. *Elective. Hours to be arranged.* Miss Lewers. (..... 1)

XXXIII. MILITARY SCIENCE AND TACTICS.

Military 1. Practical and theoretical. The practical instruction consists in squad, company, and battalion drills, both in close and extended order; small-arms target practice; guard duty; advance and rear guards and outposts; marches; ceremonies; and First Aid to the Injured. The theoretical instruction consists in recitations on the infantry drill regulations; the manual of guard duty; small-arms firing regulations; the articles of war; and company records and papers relating to enlistment, discharge, pay, rations, clothing, equipment, and the regulation of military duties. In addition lectures on the following subjects are delivered: The organization of the United States Army, including volunteers and militia; patrols and outposts; marches; camps and camp hygiene; lines and bases of operations; attack and defense of advance and rear guards and outposts; and convoys. *All male students. Both semesters, M. T. W. Th. F.* Captain Brambila.



COLLEGE OF AGRICULTURE

1. SCHOOL OF AGRICULTURE

2. SCHOOL OF DOMESTIC ARTS AND SCIENCE

COLLEGE OF AGRICULTURE.

FACULTY.

JOSEPH EDWARD STUBBS.....	President
HENRY THURTELL ¹	Dean, Professor of Mathematics
NATHANIEL ESTES WILSON.....	Professor of Chemistry and Dairying
LYSANDER W. CUSHMAN.....	Professor of the English Language and Literature
GEORGE DAVIS LOUDERBACK ²	Professor of Geology
PATRICK BEVERIDGE KENNEDY.....	Professor of Botany and Horticulture
PETER FRANDSEN.....	Professor of Zoölogy and Bacteriology
SAMUEL BRADFORD DOTEN.....	Assistant Professor of Entomology
KATE BARDENWERPER.....	Instructor in Domestic Arts and Science
CHARLES T. BOYD ³	Professor of Military Science and Tactics
GORDON H. TRUE.....	Professor of Agriculture and Animal Husbandry
BERNARD ALFRED ETCHEVERRY.....	Associate Professor of Civil Engineering
JAMES GRAVES SCRUGHAM.....	Assistant Professor of Mechanical Engineering
JOHN ALLEN REID.....	Acting Professor of Geology
IRVIN WILSON AYRES.....	Instructor in Public Speaking
CHARLES R. FITZMAURICE.....	Assistant in Chemical Laboratory
ROBERT MAURO BRAMBILA.....	Professor of Military Science and Tactics

AIM.

The aim of the School of Agriculture is to give not only an adequate training in those branches which find their application in the practice of agriculture, or the operations of farming, gardening, and stock raising, but also to give such training in English, mathematics, and the sciences as will furnish a well-rounded education.

The aim of the School of Domestic Arts and Science is to provide essential training in the art of home making.

EQUIPMENT.

The Experiment Station Farm, where investigations in irrigation and the growing of farm, garden, and forage crops are carried on, and where representatives of different breeds of pure-bred farm animals are available for class work, furnishes a valuable equipment for the study of those subjects directly related to practical agriculture.

¹Will be absent on leave 1905-6.

²Absent on leave in California as Carnegie Fellow in Geology.

³Assigned to service as Major 4th Battalion Philippine Scouts, May, 1905.

CONDITIONS OF ADMISSION.

SCHOOL OF AGRICULTURE.

1. Entrance to the School of Agriculture shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university of first rank, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the School of Agriculture must pass an examination in English composition, whether from an accredited school or not. This examination will be held in September of each year.

SCHOOL OF DOMESTIC ARTS AND SCIENCE.

Until such time as a complete course of study has been formulated, candidates for admission to the School of Domestic Arts and Science will be received as special students in the Department of Domestic Arts and Science, and will be governed by the rules for the admission of special students.

ADMISSION REQUIREMENTS.

SCHOOL OF AGRICULTURE.

Subjects and Units.

GROUP II.

English	15 units ¹
Mathematics—Algebra, Geometry	15 units
German, French, or Latin	10 units
Physics	5 units
History	10 units
Elective	5 units

GROUP III—ELECTIVES.

Latin	5 units
Physical Geography	2½ units
Chemistry	5 units
Botany	2½ or 5 units
Physiology	5 units
Zoölogy	5 units
Bookkeeping	2½ units

GROUP II admits to the School of Agriculture.

GROUP III. From this group may be selected any subject or subjects for the five elective units in Group II.

SPECIAL STUDENTS.

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students

¹A unit, as a measure of the amount of work done, is one recitation a week throughout the year, each recitation being of not less than thirty-five minutes duration. Fifteen units represent five recitations a week throughout three years; two and one-half units, a half year's work; ten units, two years' work.

without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students, excepting those in the Department of Domestic Arts and Science, must, however, be at least twenty years of age. For adequate reasons exception to the above rule may be made by the Faculty. A failure on the part of any special student to maintain a good standing in the special studies to which he is admitted will at once sever his connection with the University.

ADVANCED STANDING.

Advanced standing will be granted by the Committee on Admission only upon recommendation of the departments concerned.

REQUIREMENTS FOR A DEGREE.

The Degree of Bachelor of Science in Agriculture is conferred upon students who have satisfactorily completed the full course of study in the School of Agriculture.

COURSE OF STUDY.

SCHOOL OF AGRICULTURE.

FRESHMAN YEAR.

English 1 and 2	3h	3h
Mathematics 1b and 2b	4h	4h
Zoölogy 1	2h 2p	.....
Botany 1 .....	.....	2h 2p
Agriculture 1	2h 2p	.....
Mechanic Arts 1 .....	.....	3p
Drill	1h	1h

SOPHOMORE YEAR.

English 4	3h	3h
Horticulture 1	3h 2p	.....
Agriculture 2 .....	.....	5h
Botany 2 .....	.....	2h 2p
Zoölogy 7, Entomology	4h	.....
Chemistry 1 and 1a	2h 3p	2h 3p
Mineralogy 1a and 1b	2p	2p
Drill	1h	1h

JUNIOR YEAR.

Horticulture 3, or Agriculture 4	5h	.....
Chemistry 11	2h 2p	2h 2p
Civil Engineering 1a and 1b, Surveying	2h 2p	.....
Agriculture 3 and 4 .....	.....	5h
Geology 1, 2, and 3	3h	2h 1p
Geology 9 .....	.....	3h 1p
Drill	1h	1h

SENIOR YEAR.

Agriculture 5 and Civil Engineering 10a, Irrigation	4h	4h
Thesis .....	.....	3u

Elect any three from the following:

Chemistry 20.....	4u	3u
Hygiene 2, Bacteriology.....	4u	3u
Horticulture 2.....	4u	3u
Botany 3.....	4u	3u
Forestry 1.....	4u	3u
Agriculture 6.....	4u	3u
Agriculture 7, Farm Management.....	4u	3u
Dairy 1.....	4u	3u

COURSES OF INSTRUCTION.

VI. English.	XX. Agriculture.	XXV. Chemistry.
XV. Zoölogy.	XXI. Dairying.	XXVII. Mathematics.
XVI. Hygiene.	XXII. Domestic Arts.	XXX. Mechanic Arts.
XVII. Botany.	XXIII. Geology.	XXXI. Civil Engineering.
XVIII. Horticulture.	XXIV. Mineralogy.	XXXIII. Military.
XIX. Forestry.		

VI. ENGLISH LANGUAGE AND LITERATURE.

English 1. Composition and Rhetoric. Narration, exposition, description, argumentation. *Carpenter and Brewster:* Modern English Prose. *Hill:* Foundations of Rhetoric. *Freshmen.* Both semesters, *M. W.* Professor Cushman. (B 2)

English 2. Public speaking. The general theory of speech-making. Lectures and recitations. Practice, with instruction, in the debate, the oration, toasts, and occasional addresses. *Pittinger:* How to Become a Public Speaker. *Freshmen.* Both semesters, *T. Mr. Ayres.* (A 1)

English 4. General History of English and American Literature. Recitations and assigned readings. *Newcomer:* English Literature. *Newcomer:* American Literature. *George:* From Chaucer to Arnold, Types of Literary Art In Prose and Verse. *Sophomores.* Both semesters, *M. W. F.* Professor Cushman. (A 3)

XV. ZOOLOGY.

Zoölogy 1. General Zoölogy. An introduction to the whole field of Zoölogy; the systematic positions and relations of animals, the differentiation of complex systems of tissues and organs from the simple; the activities, habits, and adaptations of animals, the main facts of development, the theory of evolution, etc. In the laboratory a number of animal types are studied, beginning with the simplest and proceeding to the most highly organized. *Freshmen.* First semester, *T. Th.* Professor Frandsen. (C 2) (Lab. 2)

Zoölogy 7. Economic Entomology. Lectures and field work on our dangerous insect pests. Discussions of their life histories and the best means of combating them. *Sophomores.* First semester. Hours to be arranged. Assistant Professor Doten. (.....)

XVI. HYGIENE.

Hygiene 2. Bacteriology. Elementary Course. Morphology and classification of bacteria. Methods of making cultures and studying the life pro-

cesses of bacteria. Fermentation, putrefaction, etc., and their importance in the economy of nature. Pathogenic bacteria. Methods of disinfection, etc. In the laboratory, the student will learn how to obtain pure cultures of some of the common bacteria in the air, water, and soil, and how to make slide preparations of them. A final study may be made of some pathogenic form. *Prerequisite:* Botany 2. *Students wishing to take this course must first secure written permission from the instructor in charge.* *Second semester, T. Th.* Professor Frandsen. (B 2) (Lab. 2)

XVII. BOTANY.

Botany 1. Structural and Physiological Botany. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Two lectures and two laboratory periods a week. Illustrated by lantern slides and demonstrations. *Freshmen. Second semester, T. Th.* Professor Kennedy. (D 2) (Lab 2)

Botany 2. Cryptogamic Botany. A general résumé of plant life from the lowest to the highest forms; slime moulds, algæ, lichens, fungi, liverworts, mosses, ferns, horsetails, club mosses, conebearers, and flowering plants. Special attention is given to the plants in each group of economic importance. Two lectures and two laboratory periods a week illustrated by lantern slides. *Sophomores. Second semester, T. Th.* Professor Kennedy. (D 2) (Lab. 2)

Botany 3. Comparative Histology of Plants. The student will be introduced to methods of investigation, including the use of the microtome and the preparation of microscopic slides. Preliminary studies of the vegetable cell and its contents. Kinds of tissues. Microscopic structure of stems, roots, leaves, and floral organs. *Prerequisite:* Botany 1 or 2. *Agr. Senior Elective, 4 hours, first semester; 3 hours, second semester.* Professor Kennedy. (D 2)

Botany 20. Research. This State offers a new and inviting field for investigation in botanical and horticultural science, and in forestry. The flora of the State is but little known, leaving ample opportunity for original research work during the summer months in collecting material for taxonomic or histological study in the laboratory. *Students who have taken two of the Courses 1, 2, 3 or 4 in Botany, may, after consultation with the instructor, be assigned special problems suitable for thesis work. Hours to be arranged.* Professor Kennedy. (..... 1)

XVIII. HORTICULTURE.

Horticulture 1. General Horticulture. Lectures on fruit growing, vegetable gardening, the propagation of plants, the making of lawns, ornamental shrubs, and the beautifying of home and farm grounds. The laboratory work will consist of practical work in the care of plants, grafting, budding, making cuttings, pollination, and pruning. *Agr. Sophomores. Three lectures and two laboratory periods. First semester, T. Th.* Professor Kennedy. (A 5)

Horticulture 2. Pomology. Lectures, text-book and other class exercises upon the cultivation of fruits, with especial reference to the marketing, storing, and adaptability of varieties for cultivation in Nevada. *Elective. Seniors. First semester, M. W. Th. F; second semester, M. W. F.* Professor Kennedy. (A 4)

Horticulture 3. Evolution of Cultivated Plants. A discussion of organic evolution as applied to the modification of plants, particularly those in cultivation. *L. H. Bailey:* Plant Breeding. *Prerequisites:* Botany 1 and 2. *Juniors. First semester, M. T. W. Th. F.* Professor Kennedy. (C 5)

XIX. FORESTRY.

Forestry 1. Elementary Forestry. Lectures on the effects of deforestation on the water supply, forest protection and regeneration; the use and durability of the different woods, and forest economics. *Prerequisite:* Botany 1. *First semester, M. W. Th. F.; second semester, M. W. F.* Professor Kennedy. (B 4)

XX. AGRICULTURE.

Agriculture 1. Breeds of Live Stock. A study of the history and characteristics of the pure breeds of farm animals. "The Study of Breeds" will be used as a text book and be supplemented by lectures and the use of lantern slides showing photographic reproductions of typical animals. In conjunction with this work in the class room, practical work will be given in judging animals representative of the different types and breeds. Two lectures and two laboratory periods. *Freshmen. First semester, T. Th.* Professor True. (.....2)

Agriculture 2. Soils and Crops. Study of the nature and function of soil; the characteristics of different soils and their treatment in the growing of crops, followed by history, distribution, and character of the different farm crops, their improvement by selection, and how to grow them. *Sophomores. Second semester, M. T. W. Th. F.* Professor True. (B 5)

Agriculture 3. The Breeding and Feeding of Live Stock. Breeding: A discussion of the laws and principles relating to the breeding of animals, and their application to breeding operations; the value of pedigrees, and the care of breeding stock on the farm. Feeding: Discussion of the source of food, the laws of nutrition, the value of various feeding stuffs as indicated by their composition and digestibility; the theory of balanced rations and the practice of feeding. *Juniors. First semester, M. T. W. Th. F.* Professor True. (C 5)

Agriculture 4. Veterinary Science. This course is intended to give the student such a knowledge of the more common ailments of domestic animals that he may recognize them, and such a knowledge of the nature of disease as to enable him to maintain sanitary conditions, intelligently to combat infection, and to know when the services of a veterinarian are necessary. *Juniors. Second semester, M. T. W. Th. F.* Professor True. (C 5)

Agriculture 5. Irrigation. A brief review of the history of irrigation, the development of irrigation laws, and the doctrine of appropriation. Study of the relation of rainfall, evaporation, and seepage to water supply; the character of irrigating waters, methods of applying water to land, the effect of irrigation upon alkali in the soil, the measurement of water upon the farm, and the duty of water. *Seniors. First semester, M. T. W. F.* Professor True. (D 4)

Agriculture 6. Feeding Animals and Selection of Breeding Stock. This

course is designed for students intending to follow animal husbandry as a business, and consists of the study of some problem agreed upon by instructor and student by means of research and experiment. Stock Judging: A study of breed type from the point of view of the breeder of pure-bred animals. *Elective. Seniors. Hours to be arranged. Professor True.*

Agriculture 7. Farm Management. *Elective. Seniors. Hours to be arranged. Professor True.* (.....4)

XXI. DAIRYING.

Dairying 1. Theory and Practice of Dairying. Lectures upon the formation and composition of milk; ferments and their action; testing for purity and value; methods of manufacture of cheese and butter. The lectures are supplemented by practical work with different testing apparatus, and by the inspection of dairies and creameries fitted with modern apparatus. *Elective. Seniors. First semester, M. W. Th. F.; second semester, M. W. F. Professor Willson.* (..... 4)

XXII. DOMESTIC ARTS AND SCIENCE.

Domestic Arts and Science 1. Sewing. The various stitches used in hand-sewing, the care and use of the sewing machine; the draughting and making of undergarments, shirt waists, cotton dresses, and children's clothes. Talks on textiles. *First year. Both semesters, M. W. Miss Bardenwerper. (B 2)*

Domestic Arts and Science 2. Sewing. Draughting of patterns by means of the chart. Woolen materials in stripes and plaids are used. The first steps in millinery, practice materials being used. *Second year. Both semesters, M. W. Miss Bardenwerper. (B 2)*

Domestic Arts and Science 3. Sewing. Original work in dressmaking. Work in millinery continued. Making of hat and bonnet frames. Lectures on harmony in outline and color. *Third year. Both semesters, M. W. Miss Bardenwerper. (C 2)*

Domestic Arts and Science 4. Sewing. Construction of a tailor-made gown. Millinery: hat trimming and the handling of crape. *Fourth year. Second semester, M. W. Miss Bardenwerper. (C 2)*

Domestic Arts and Science 5. Cookery. Arrangement of the kitchen with regard to convenience and sanitary conditions, and the care and use of kitchen and dining-room utensils and appointments. Food values discussed from a dietetic standpoint; the typical and simpler foods prepared. Demonstrations in frying, roasting, and broiling are given, and the markets are visited. Later in the year more advanced practice cookery is done, with some original work. *First year. Both semesters, T. Th. Miss Bardenwerper. (B 2)*

Domestic Arts and Science 6. Cookery. The arrangement and furnishing of the dining-room. Preparation of menus in accordance with dietetic and economic standards. Practice work in preparation, garnishing, and serving of the more elaborate dishes. A course in invalid cookery follows, the essential feature of which is the dainty serving of individual dishes. *Second year. Both semesters, T. Th. Miss Bardenwerper. (B 2)*

Domestic Arts and Science 7. Cookery. Jelly making, preserving, canning, and pickling. Practice in candy making, including French candies

(these having fondant as their base), the so-called home-made candies and glacé fruits. Practice work also includes most advanced cookery. A chafing dish course finishes the year. *Third year. Both semesters, T. Th. Miss Bardenwerper.* (C 2)

Domestic Arts and Science 8. Cookery. The calculation of dietaries; and the preparation of the meals thus computed. Practice work in advanced cookery continued. A luncheon is served at the close of the term. *Fourth year. First semester, T. Th. Miss Bardenwerper.* (B 2)

Domestic Arts and Science 9. Household Economics. Lectures and informal talks on the location, construction, arrangement, and furnishing of the house in obedience to hygienic laws of ventilating, heating, lighting, etc. Proper methods of laundry-work considered. Estimates made of the cost of living, incomes varying in amount being used as the basis for calculations. *Fourth year. Both semesters. Hours to be arranged. Miss Bardenwerper.*

XXIII. GEOLOGY.

Geology 1. Dynamic and Structural. Illustrated lectures. *Juniors. Agr., C. E., Mines. First semester, M. W. F. Professor Louderback.* (D 3)

Geology 2. Petrography. The nature, origin, and distinctive properties of rocks. General Petrography. Systematic Petrography. *Prerequisites:* Mineralogy 1 and Geology 2. *Juniors. Agr., C. E., Mines. Second semester, M. W. Professor Louderback.* (D 2)

Geology 3. Geological Laboratory. Rock constituents and rock structures. *Supplementary to Course 2. Juniors. Second semester, M. Professor Louderback.* (Lab. 1)

Geology 9. Origin of Soils. The nature and origin of soils from a geological standpoint. *Prerequisites:* Geology 1, 2, and 3, Chemistry 1 and 1a. *2 hours lectures and 1 laboratory period. Second semester; hours to be arranged. Professor Louderback.* (Lab. 1) (.....2)

XXIV. MINERALOGY.

Mineralogy 1a. Elementary Mineralogy. Determination of minerals by observational methods and the simple tests useful in the field, such as those with the pocket knife, lens, and streak plate. *Prerequisites:* Chemistry 1 and 1a. *Sophomores. First semester, Th. F. Professor Louderback.* (Lab. 2)

Mineralogy 1b. Blowpipe Mineral Analysis. The determination of minerals by blowpipe methods, using simple wet tests for the more complex silicates. *Prerequisite:* Mineralogy 1a. *Sophomores. Second semester, Th. F. Professor Louderback.* (Lab. 2)

XXV. CHEMISTRY.

Chemistry 1. General Chemistry (Lecture Course). Lectures and recitations on the theories and principles of chemistry with special reference to their applications to practical work. Technical processes receive much attention, and the latest developments of chemical theory are discussed. Stochiometrical calculations are made a feature of this course. *Hinds: Inorganic Chemistry.* (For supplementary reading the works of *Remsen, Ostwald, etc.*, are recommended.) *Sophomores. Both semesters, T. Th. Professor Wilson.* (B 3)

Chemistry 1a. General Chemistry. Laboratory manipulations, study of reactions, and chemical preparations. Text: Some standard manual, supplemented by individual assignments. *First half of first semester.*

Qualitative Analysis (Laboratory). The reactions of the more important elements are thoroughly studied, and the methods of their separation in mixtures of varying complexity are taught. This course begins with the analysis of simple compounds and extends to the analysis of complex substances such as ores, minerals, and alloys. Effort is made to inculcate the proper methods of manipulation and to avoid mechanical work. All reactions are required to be written as they occur and the notes to be carefully and neatly kept and handed in for correction. A feature of the course is the frequent quiz, either oral or written, together with a full explanation of the theory of analysis. *Medicus:* Qualitative Analysis (Marshall's Translation). *Sharwood:* Scheme of Separation. *Sophomores.* *Second half of first semester and all of second semester, Th. F. S.* Professor Wilson. (Lab. 3)

Chemistry 11. Agricultural Chemistry. Lectures (2) and laboratory practice (2) upon the quantitative analysis of soils, fertilizers, agricultural products, etc., how plants grow, mineral basis of soil, chemical effect of tillage, feeding stuffs, etc. *Johnson:* How Crops Grow and How Crops Feed. *Juniors.* *Both semesters, M. W. Th. F.* Professor Wilson. (.....4)

Chemistry 20. Advanced Courses. *Elective in the Sophomore or Junior years, when the prerequisites have been completed. Hours to be arranged.* Professor Wilson.

XXVII. MATHEMATICS.

Mathematics 1b. College Algebra. Begins with quadratic equations and includes the progressions, proportion, variation, the Binomial Theorem with applications and logarithms. *Freshmen.* *First semester, M. W. Th. F.* Professor (A 4)

Mathematics 2b. Solid Geometry and Plane Trigonometry. The geometry of the plane, the cylinder, the cone, the prism, the pyramid, and the sphere. The trigonometry includes the elementary ideas concerning the trigonometrical functions and their relations to each other, and the solution of plane triangles. *Freshmen.* *Second semester, M. W. Th. F.* Professor (A 4)

XXX. MECHANIC ARTS.

Mechanic Arts 1. Wood Shop, Forge Shop, and Machine Shop. The wood shop contains four power wood-turning lathes, one Fay Egan tilt-table jig-saw, one Fox wood trimmer, one combination wood planer and circular-saw machine, one band saw, one wood-paneling machine, one grindstone, twenty-four benches and fifteen sets of wood-workers' tools. The forge shop contains eight forges equipped with smithing tools, and is fitted with pressure and exhaust system piping and fans. The machine shop is equipped with machine lathes, etc. *Freshmen.* *Second semester, 3 hours, to be arranged.* Mr. (.....3)

XXXI. CIVIL ENGINEERING.

Civil Engineering 1a. Surveying. Theory of Surveying. Construction, use, and adjustment of instruments. Methods employed in topographic,

land, city, mining, and hydrographic surveys. Practical problems. Lectures and recitations. *Juniors. Both semesters, T. Th. Professor*
(C 2)

Civil Engineering 1b. Surveying. Field practice and office work. Adjustments of surveying instruments in the field; taking of notes for plane and topographical surveys and making of maps from them. Leveling. Plane table work. *Juniors. Both semesters, Th. F. Professor* (Field 2)

Civil Engineering 10a. Irrigation. The laying out of canals and ditches, the construction of flumes and head-gates. The measurement of flow of water by means of weirs and current meters. The construction of dams. The selection of reservoir sites. *Seniors. Second semester, M. W. F. Professor*
(D 3) (Field 1)

XXXIII. MILITARY SCIENCE AND TACTICS.

Military 1. Practical and Theoretical. The practical instruction consists in squad, company, and battalion drills, both in close and extended order; small-arms target practice; guard duty; advance, and rear guards and outposts; marches; ceremonies; and First Aid to the Injured. The theoretical instruction consists in recitations on the infantry drill regulations; the manual of guard duty; small-arms firing regulations; the articles of war; and company records and papers relating to enlistment, discharge, pay, rations, clothing, equipment, and the regulation of military duties. In addition lectures on the following subjects are delivered: The organization of the United States Army, including volunteers and militia; patrols and outposts; marches; camps and camp hygiene; lines and bases of operations; attack and defense of advance and rear guards and outposts; and convoys. *All male students. Both semesters, M. T. W. Th. F. Captain Brambila.*

COLLEGE OF ENGINEERING.

- 1. SCHOOL OF MINING ENGINEERING**
 - 2. SCHOOL OF MECHANICAL ENGINEERING**
 - 3. SCHOOL OF CIVIL ENGINEERING**
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COLLEGE OF ENGINEERING.

FACULTY.

JOSEPH EDWARD STUBBS.....	President
HENRY THURTELL ¹	Dean, Professor of Mathematics and Mechanics
NATHANIEL ESTES WILSON.....	Professor of Chemistry
LAURA DE LAGUNA.....	Associate Professor of the Modern Languages
GEORGE FREDERICK BLESSING ²	Professor of Mechanical Engineering
LYSANDER W. CUSHMAN.....	Professor of the English Language and Literature
GEORGE DAVIS LOUDEBACK ³	Professor of Geology and Mineralogy
GEORGE J. YOUNG.....	Professor of Mining and Metallurgy
MILDRED MAUDE WHEELER.....	Instructor in German and Mathematics
CHARLES T. BOYD ⁴	Professor of Military Science and Tactics
BERNARD ALFRED ETCHEVERRY.....	Associate Professor of Civil Engineering
JAMES GRAVES SCRUGHAM.....	Assistant Professor of Mechanical Engineering
JOHN ALLEN REID.....	Acting Professor of Geology and Mineralogy
WILLIAM BRYANT THOMPSON ⁵	Instructor in Mechanical Engineering
WILLIAM JAMES O'NEILL.....	Student Assistant in Mechanical Engineering
ABRAM H. STECKLE.....	Student Assistant in Mechanical Engineering
ROBERT MAURO BRAMBILA.....	Professor of Military Science and Tactics
CHARLES R. FITZMAURICE.....	Assistant in Chemical Laboratory

AIM.

The aim of the College of Engineering is to equip the young men of Nevada who wish to share actively in the industrial development of the State and the Nation, with such knowledge of mining, mechanical and civil engineering that they will be able to meet the competition of their fellows.

EQUIPMENT.

MINING BUILDING.

Through the generosity of the last Legislature, a much-needed Metallurgical Laboratory is now being constructed as a wing to the Mining Building. Seven thousand dollars will be used to defray the cost of the building, and nine thousand dollars will be expended in machinery and equipment. This sum is thought to be sufficient to fit up this laboratory with apparatus suit-

¹ Will be absent on leave 1905-6.

² Will be absent on leave 1905-6.

³ Absent on leave in California as Carnegie Fellow in Geology.

⁴ Assigned to service as Major 4th Battalion Philippine Scouts, April, 1905.

⁵ Resigned, 1905.

able for students' use in testing and working the many different kinds of ore. The plan is such that ore can be tested in quantities large enough so that the experiments may give a good idea of the real economic working value of the methods used.

MECHANICAL BUILDING.

The workshop is a brick building of superior design. The ground floor is applied to the use of the machine shop, the blacksmith shop, and the boiler room. The wood shop occupies the second floor, and is fitted up with one power jig saw, one band saw, one universal wood-working machine, four wood lathes, one universal trimmer, one grindstone. There are twenty-four benches and an equal number of lockers. Each locker contains a complete set of hand tools. The tool room is provided with every needed variety of the more complex wood-working tools. The machine shop is furnished with one tool-room lathe, two screw-cutting lathes, one polishing lathe, one shaper, one universal milling machine, one universal cutter grinder, five bench vises, one wet emery wheel, one dry emery wheel, one alternating current dynamo, one direct current dynamo, and a tool room equipped with small machine tools and certain experimental apparatus for the use of mechanical engineering students. The blacksmith shop has forges and the necessary tools. A new engine with full equipment for testing the power and efficiency of engines has recently been obtained from the exhibits at the Louisiana Purchase Exposition and installed for use the coming year.

OTHER LABORATORIES.

The Chemical Laboratory, the Geological Laboratory, the Physical Laboratory and draughting room are well equipped with all necessary appliances for the needs of engineering students.

CONDITIONS OF ADMISSION.

1. Entrance to all of the University Schools shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. High schools of other States, if accredited by a State University or other university of first rank, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

3. All students entering the University must pass an examination in English composition, whether from an accredited school or not. This examination will be held in September of each year.

ADMISSION REQUIREMENTS.

Subjects and Units.

GROUP II.

English	15 units
Mathematics—Algebra, Geometry	15 units
German, French, or Latin	10 units
Physics	5 units
History	10 units
Elective.....	5 units

GROUP III—ELECTIVES.

Latin	5 units ¹
Physical Geography.....	2½ units
Chemistry	5 units
Botany	2½ or 5 units
Physiology	5 units
Zoölogy	5 units
Bookkeeping	2½ units

GROUP II admits to all schools in the College of Engineering.

GROUP III. From this group may be selected any subject or subjects for the five elective units in Group II.

SPECIAL STUDENTS.

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons exceptions to the above rule may be made by the Faculty. A failure on the part of any special student to maintain a good standing in the special studies to which he is admitted will at once sever his connection with the University.

ADVANCED STANDING.

Advanced standing will be granted by the Committee on Admission only upon the recommendation of the departments concerned.

REQUIREMENTS FOR A DEGREE.**THE BACCALAUREATE DEGREE.**

(1) The degree of Bachelor of Science in Mining Engineering is conferred upon students who have satisfactorily completed the full course of study in the School of Mining Engineering; (2) the degree of Bachelor of Science in Mechanical Engineering, upon students who have satisfactorily completed the full course of study in the School of Mechanical Engineering; (3) the degree of Bachelor of Science in Civil Engineering, upon students who have satisfactorily completed the course of study in the School of Civil Engineering.

THE DEGREE OF MINING ENGINEER.

The requirements for the degree of Mining Engineer, Mechanical Engineer, and Civil Engineer are under consideration.

¹A unit, as a measure of the amount of work done, is one recitation a week throughout the year, each recitation being of not less than thirty-five minutes duration. Fifteen units represent five recitations a week throughout three years; two and one-half units, a half year's work; ten units, two years' work.

COURSE OF STUDY.

FRESHMAN YEAR—ALL SCHOOLS.

English 1 and 2	3
Mathematics 1b, 2b	5
Chemistry 1	3
Chemistry 1a	2 Lab.
Physics 1	2 Lab.
Mechanic Arts 1	2 Lab.
Drawing 1 (Freehand)	2 (5) 1s
Drawing 2 (Mechanical)	2 (5) 2s
Military Drill	1

SOPHOMORE YEAR—ALL SCHOOLS.

Mathematics 3, 4, 5, 6	5
Chemistry 3a	3 Lab.
Mineralogy 1a, 1b, 2, and 3, Students in Mining Engineering and Civil Engineering	2 Lab.
Electrical Catechism, Students in Mechanical Engineering	2 Lab.
Physics 2	3
Physics 3	1 Lab.
Mechanic Arts 2	2 Lab.
Mechanical Engineering 1, Drawing 3	3 (5)
Military Drill	1

SCHOOL OF MINING ENGINEERING.

JUNIOR YEAR.

Mining 7	3	3
Mining 11	1, 1 Lab.	1, 2 Lab.
Geology 1, 2, 3, 4, 5 (with field work)	3	3
Civil Engineering 1a, 1b	2, 3 Lab.	2, 3 Lab.
Civil Engineering 6	2, 1 Lab.	
Mathematics 7, 8	4	4
Mathematics 10		2
Military Drill	1	1

JUNIOR-SENIOR YEAR.

Summer Term.

June—4 weeks Mining Surveying at Virginia City

SENIOR YEAR.

Mining 1, 2	5	5
Mining 3	1 Lab.	1 Lab.
Mining 5		
Mining 6		1
Mining (Metallurgy) 8, 9	5	5
Mining (Metallurgy) 10	2 Lab.	2 Lab.
Geology 6, 7, 20	3, 1 Lab.	3
Hydraulics	3	
Thesis		2

SCHOOL OF MECHANICAL ENGINEERING.

JUNIOR YEAR.

Mechanical Engineering 2, 3.....	3	3
Civil Engineering 6.....	2	1 Lab.
Mechanical Engineering 11.....	3	3
Mathematics 7, 8.....	4	4
Mathematics 10.....		2
Civil Engineering 1.....	2, 3 Lab.	2, 3 Lab.
Drawing 5, 6.....	2 Lab.	2 Lab.
Military Drill.....	1	1

SENIOR YEAR.

Mechanical Engineering 5, 7.....	5	5
Mechanical Engineering 8.....		3
Mechanical Engineering 4.....		3
Compressed Air and Mechanical Engineering 6.....	2	
Gas Engines.....		2
Hydraulics.....	3	
Thesis.....		3
Journal Reading.....	1	1
Drawing 7, 8.....	5 Lab.	5 Lab.

SCHOOL OF CIVIL ENGINEERING.

JUNIOR YEAR.

Mathematics 7, 8.....	3	3
Civil Engineering 1.....	4	4
Mathematics 10.....		2
Civil Engineering 6.....	2, 1 Lab.	
Civil Engineering 6.....		3
Geology 1, 2, 3, 4, 5.....	3	2, 1 Lab.
Civil Engineering 8.....		2
Mechanical Engineering 11.....	3	
Drill.....	1	1

SENIOR YEAR.

Mathematics 9.....	3	2 Lab.
Civil Engineering 7.....	3 Lab.	
Civil Engineering 11.....	3	
Astronomy 1.....		4
Civil Engineering 9.....	3	
Civil Engineering 5a, 5b.....		5
Mechanical Engineering 6.....		3
Mining 6.....		1
Civil Engineering 10.....	3	
Thesis.....	2	2

COURSES OF INSTRUCTION.

VI. English.	XXVI. Physics.	XXX. Mechanic Arts.
XXIII. Geology.	XXVII. Mathematics.	XXXI. Civil Engineering.
XXIV. Mineralogy.	XXVIII. Mining.	XXXII. Drawing.
XXV. Chemistry.	XXIX. Mec. Engineering.	XXXIII. Military.

VI. ENGLISH.

English 1. Composition and Rhetoric. Narration, exposition, description, argumentation. *Carpenter and Brewster: Modern English Prose. Hill: Foundations of Rhetoric. Freshmen, all schools, M. W.* Professor Cushman. (B 2)

English 2. Public Speaking. The general theory of speech-making. Lectures and recitations. Practice, with instruction, in debate, the oration, toasts, and occasional addresses. *Pittinger: How to Become a Public Speaker. Freshmen, all schools, T.* Mr. Ayres. (A 1)

XXIII. GEOLOGY. *Faulty*

Geology 1. Dynamic and Structural. Illustrated lectures. *Juniors, C. E., Mines. First semester, M. W. F.* Professor Louderback. (D 3)

Geology 2. Petrography. The nature, origin, and distinctive properties of rocks. *Prerequisites: Geology 1 and Mineralogy 1. Juniors, C. E., Mines. Second semester, M. W.* Professor Louderback. (D 2)

Geology 3. Geological Laboratory. Supplementary to Course 2. The study of rocks by microscopical methods. *Juniors, C. E., Mines. Second semester, M.* Professor Louderback. (Lab. 1)

Geology 4. Geological Laboratory. Continuation of Course 3. The study of rocks and minerals by microscopical methods. *Prerequisites: Geology 1, 2, 3; Mineralogy 1, 2, 3, 4. Seniors, C. E., Mines. First semester, M.* Professor Louderback. (Lab. 1)

Geology 5. Field Geology. A practical study of field methods and their application to the formations in the vicinity of the University, with practice at map reading and plotting of results. *Prerequisites: Geology 1, 2, 3, 6 (Geology 6 may be taken simultaneously); ten days of actual satisfactory field work during the second term. Junior Mines. Second semester, M.* Professor Louderback. (Lab. 1)

Geology 6. Historical Geology. An outline of the history of the earth, as written in the rocks of the crust and the topographic forms of the surface; with the distinctive characteristics of the rocks of the different geological periods, especially in Western America. *Senior Mines. Prerequisite: Geology 1. First semester, T. Th.* Professor Louderback. (A 2)

Geology 7. Economic Geology. A discussion of the nature and origin of ore and other economic deposits, and a study of their mode of occurrence in typical and important mining regions. *Seniors. Prerequisites: Mineralogy 1; Geology 1, 2, 3, 4, 5, and 6. Second semester, T. Th.* Professor Louderback. (A 2)

Geology 20. Research Work. This State, even in the vicinity of the University, offers a particularly open and inviting field of investigation in all the branches of geological science—physiography (physical geography), petrography, and glacial, stratigraphic and economic geology. The work may consist of: 1. The study of some special geological problem, or of the geology of some special district in the field, and the preparation of results. 2. The investigation of special problems, or the study of material gathered in the field, by chemical or microscopical laboratory methods. 3. Critical read-

ing and discussion of important scientific economic monographs, and of current geological literature. *Hours to be arranged.* Professor Louderback.

XXIV. MINERALOGY.

Family

Mineralogy 1a. Elementary Mineralogy. Determination of minerals by observational methods and the simple tests useful in the fields, such as those with pocket-knife, lens, and streak plate. *Prerequisites:* Chemistry 1, 1a, and 3. *Sophomores, C. E., Mines. First semester, T. Th.* Professor Louderback. (B-C Lab. 2)

Mineralogy 1b. Blowpipe Mineral Analysis. Determination of minerals by blowpipe methods, using simple wet tests on the more complex silicates. *Prerequisites:* Mineralogy 1a, Chemistry 1, 1a, and 3. *Sophomores, C. E., Mines. Second semester, T. Th.* Professor Louderback. (B-C Lab. 2)

Mineralogy 2. Crystallography. Lectures and laboratory. The morphology of minerals. Given as part of Course 1a during 1905-6. *Prerequisites* as for Mineralogy 1. *Sophomores, C. E., Mines.* Professor Louderback.

Mineralogy 3. Descriptive Mineralogy. A description of the important characteristics and mode of occurrence of the more common minerals, with their classification into natural groups. Given as part of Course 1b during 1905-6. *Prerequisites:* Mineralogy 1 and 2. *Sophomores, C. E., Mines.* Professor Louderback.

XXV. CHEMISTRY.

Chemistry 1. General Chemistry. Lectures and recitations on the theories and principles of chemistry, with special reference to their applications to practical work. Technical processes receive much attention, and the latest developments of chemical theory are discussed. Stoichiometrical calculations are made a feature of this course. *Hints:* Inorganic Chemistry. (For supplementary reading the works of *Remsen, Ostwald, etc.*, are recommended.) *Freshmen. Both semesters, M. W. F.* Professor Willson. (C 3)

Chemistry 1a. General Chemistry (Laboratory). Laboratory manipulations, study of reactions and chemical preparations. Text: Some standard manual supplemented by individual assignments. *First half of first semester.*

Qualitative Analysis (Laboratory). The reactions of the more important elements are thoroughly studied, and the methods of their separation in mixtures of varying complexity are taught. This course begins with the analysis of simple compounds and extends to the analysis of complex substances, such as ores, minerals, and alloys. Effort is made to inculcate the proper methods of manipulation and to avoid mechanical work. All reactions are required to be written as they occur and the notes to be carefully and neatly kept and handed in for correction. A feature of the course is the frequent quiz, either oral or written, together with a full explanation of the theory of analysis. *Medicus:* Qualitative Analysis (Marshall's Translation). *Sharwood:* Scheme of Separation. *Freshmen. Second half of first semester and all of second semester, W. Th.* Professor Wilson. (Lab. 2)

Chemistry 3a. Quantitative Analysis (Laboratory Course). A very thorough and comprehensive course covering the gravimetric determination of the components of simple substances: limestone, feldspar, coal, ores of

the common metals, acidimetry and alkalimetry, and volumetric analysis. Special attention is given to manipulation. After the general course as outlined is completed, individual assignments are made, according to the school in which the student wishes to take his degree. *Talbot: Quantitative Analysis.* (References: *Cairn's Fresenius* and *Sutton's Volumetric Analysis.*) *Sophomores. Both semesters, Th. F. S.* Professor Wilson. (Lab. 3)

XXVI. PHYSICS.

Physics 1. Physical Laboratory. A series of more or less careful quantitative experiments intended to give the student a practical knowledge of the fundamental laws of Physics, and to introduce him to careful quantitative measurement. Care, neatness, exactness, and close scientific reasoning are the characteristic features of the work. *Freshmen. Both semesters, F. S.* Professor (Lab. 2)

Physics 2. General Physics. Lectures and recitations with experimental illustrations and problems. Properties of matter, heat, magnetism, and electricity. *Sophomores. Both semesters, M. W. F.* Professor (B 3)

Physics 3. Physical Measurements. Experimental work requiring quantitative results. Most of the experiments are electrical experiments. *Sophomores. Both semesters, W.* Professor (Lab. 1)

XXVII. MATHEMATICS.

Mathematics 1b. College Algebra. Begins with quadratic equations, and includes the progressions, proportion, variation, the Binomial Theorem with applications, and logarithms. *Freshmen. First semester, M. T. W. Th. F.* Professor (A 5)

Mathematics 2b. Solid Geometry and Plane Trigonometry. The geometry of the plane, the cylinder, the cone, the prism, the pyramid, and the sphere. The trigonometry includes the elementary ideas concerning the trigonometrical functions and their relations to each other and the solution of plane triangles. *Freshmen. Second semester, M. T. W. Th. F.* Professor (A 5)

Mathematics 3. Spherical Trigonometry. The methods of solution of all classes of spherical triangles and the application of spherical trigonometry to the elementary problems of the astronomy of the earth. *Sophomores. First semester, M. T. W. Th. F. for six weeks.* Professor (B 5)

Mathematics 4. Analytic Geometry. The straight line and the circle. This follows Course 3 during last ten weeks of the first semester. *Sophomores. First semester, M. T. W. Th. F. for ten weeks.* Professor (B, E 5)

Mathematics 5. Analytical Geometry. The geometry of the parabola, the ellipse, the hyperbola, and of some of the curves of higher degree. *Sophomores. First eight weeks of second semester, M. T. W. Th. F.* Professor (B, E 5)

Mathematics 6. Differential Calculus. Methods of differentiation of the different classes of functions and of the application of the calculus to expansions of functions, development of equations of tangents and normals, curve

tracing, maxima and minima. *Sophomores. Second semester, last ten weeks.*
M. T. W. Th. F. Professor (B, E 5)

Mathematics 7. Integral Calculus. Methods of integration of functions, the application of the calculus to finding areas of surfaces, lengths of curves, volumes of solids, moment of inertia. *Juniors. First semester, M. T. W. Th.*
Professor (C 4)

Mathematics 8. Analytical Mechanics. The analytical solution of problems of statics and kinetics, and kinematics. *Bowser's Analytic Mechanics* is used for a text. *Juniors. Second semester, M. T. W. Th.*
Professor (C 4)

Mathematics 9. Hydraulics. The study of the general subject with special reference to the demands made upon engineers in the arid West. *Merriman's Hydraulics* is used as a text. *Seniors. First semester, M. W. F.*
Professor (D 3)

Mathematics 10. Strength of Materials. The study of the general subject with reference to its practical value in problems concerning engineering designs. *Merriman's Mechanics of Engineering* is used as a text. *Juniors.*
Second semester, M. W. Professor (E 2)

XXVIII. MINING AND METALLURGY.

Mining 1. Lectures and Recitations. Excavation, explosives, tunneling, boring, shaft-sinking. *Seniors. First semester, M. T. W. Th. F. Professor*
Young. (B 5)

Mining 2. Lectures and Recitations. Ore deposits, prospecting, development, exploitation, examination, management, mine equipment, mining law. *Seniors. Second semester, M. T. W. Th. F. Professor Young.* (B 5)

Mining 3. Mining Laboratory. Problems in engineering and in the design of mining and metallurgical machinery; review and discussion of technical journals and books. *Seniors. Both semesters, Lab., M. Professor Young.*

Mining 4. Mining Laboratory. The work in this course is given by the Mechanical Engineering Department, and consists of practice in sharpening and tempering hand and machine drills, in the use of the same, and in forging and welding. *Sophomores. Second semester, S. Professor Young.* (A 1)

Mining 5. Excursions. During the year two extended trips are taken to Virginia City and vicinity. The first trip is taken during the latter part of the first term and has for its object the study of an ore deposit. The surface and underground conditions and the relationship of the mine openings and underground work to the deposit are the special subjects of study. Mapping of the geological formations is also done in order to facilitate the interpretation of the structure. The second trip, taken in the latter half of the second semester, has for its object the study of the mine surface plants, mine equipment, underground work, mills, cyanide and reduction plants. A report of the observations, together with sketches, is required of each student. *Seniors. Professor Young.*

Mining 6. Engineering Contracts and Specifications. Lectures and text. *Seniors. Second semester, M. Professor Young.* (C 1)

Mining 7. Metallurgy (General). Lectures and recitations. Physical properties of the more important metals and alloys; manufacture and physical properties of the structural metals; fuel and heat measurement; metallurgical furnaces, processes and products; crushing and sampling of ores. *Juniors. Both semesters, M. W. F.* Professor Young. (D 3)

Mining 8. Metallurgy (Gold and Silver). Lectures and recitations. A discussion of the ores, processes of separation, plants and machinery, management and economic conditions. *Seniors. First semester, M. T. W. Th. F.* Professor Young. (C 5)

Mining 9. Metallurgy (Copper, Lead, Zinc). Lectures and recitations. A discussion of the ores, methods of reduction, plants and machinery, management, and economic conditions. *Seniors. Second semester, M. W. Th. F.* Professor Young. (C 5)

Mining 10. Metallurgical Laboratory. A series of experiments are given which are designed to supplement, in part, the class-room work and to illustrate the more important methods of ore treatment. *Seniors. Both semesters, Th. F.* Professor Young. (E 2)

Mining 11. Assaying. Lectures and recitations. Methods of assay, systems of weights used, calculations and problems, equipment of assaying laboratories, sampling, chemistry of assaying, errors and losses in assaying, special topics. *Juniors. Both semesters, T. Th.* Professor Young. (A 1, Lab. 2)

Mining 12. Assaying Laboratory. Practice in weighing, crushing, and sampling of ores; scorification and crucible assay; assay of metallurgical products; use of miners' pan, horn, and batea. *First semester, Lab., T. Second semester, Lab., T. W.* Professor Young.

Mining 20. Thesis. Each Senior student is required to hand in a thesis on some subject in mining or metallurgy or related branch of engineering. *Seniors. Second semester.* Professor Young.

XXIX. MECHANICAL ENGINEERING.

Mechanical Engineering 1. Descriptive Geometry. The representation of points, lines, and planes is taught, together with problems relating to the right line and plane. Curved lines, tangents, normals, cylindricals, conical and warped surfaces, the helicoid, the hyperboloid, and problems relating to them; shades and shadows and the principles of perspective and isometric projection are studied. Many practical problems are given for solution and construction. *Sophomores. Second semester, M. W. F.* Assistant Professor Scrugham. (D 3)

Mechanical Engineering 2. Kinematics. The geometry of machinery, showing the laws which govern the velocity of moving parts, velocity ratio in various motions, the correct forms for gear teeth, quick return motions, link motions and the manner of designing trains of mechanism. The mathematical demonstrations and proofs are first studied from text book, and then practical problems are given to the student to solve on the drawing board. *Junior. First semester, T. Th.* Assistant Professor Scrugham. (B 2)

Mechanical Engineering 3. Theory of Steam Boilers. The design and construction of the various types of commercial steam boilers; including methods of riveting and staying; the care of boilers, the prevention of scale and corrosion, consumption of fuel, determining the horse power of boilers, the design of boilers for efficiency and economy, the methods of power transmission and the study of modern boiler plants. At the completion of the text book each student is required to design a boiler or battery of boilers and necessary fittings. This includes the preparation of specifications and complete working drawings ready for the boiler maker and the erecting engineer. *Junior. Second semester, T. Th. Assistant Professor Scrugham. (B 2)*

Mechanical Engineering 4. Machine Design. A study of the application of the laws of velocity, force, and strength of materials to the design of machinery. The design of tooth and belt gearing, shafts, journals, hangers, cylinders, springs, bolts, keys, etc. The text-book work is strengthened by the practical work on the drawing board. *Senior. First semester, M. W. F. Assistant Professor Scrugham. (C 3)*

Mechanical Engineering 5. Steam Engine Design. The principles involved in the design of all parts of the steam engine, together with the theoretical indicator diagrams for simple, compound, and triple expansion engines. Crank effort diagrams, illustrating the influence of friction and of the reciprocating and rotative parts, are taken up, and finally the valve motion and weight of the reciprocating parts are designed to give results which will conform to an assumed ideal indicator card. *Senior. Second semester, M. T. Th. P. Assistant Professor Scrugham. (A 4)*

Mechanical Engineering 6. Dynamometers and Measurement of Power. The determination of driving power, friction brakes, absorption dynamometers, transmission dynamometers, the measurement of water and electrical power, and power required to drive machinery. The text book is followed by experimental work in the laboratory. *Senior. First semester, M. W. F. Assistant Professor Scrugham. (D 3)*

Mechanical Engineering 7. Power Prints. In the industrial and business world to-day the power plant occupies a place of importance which it never has had hitherto, and the success or failure of business enterprises and manufacturing corporations often depends upon the condition of the power house. In order to judge fairly the advantages and disadvantages involved in questions relating to the power plant, the engineer must be familiar with the solutions which experience and good judgment have proposed for similar problems. To this end the mechanical engineering of power plants is here presented in rather a non-mathematical way, and the machinery appliances and economical auxiliaries employed have their practical and experimental side shown. *Senior. Second semester, T. Th. Assistant Professor Scrugham. (.....2)*

Mechanical Engineering 8. Valve Gearing. A study of the various forms of standard engine valves, link motions, radial gears, and shaft regulation. The mathematical proofs of the methods and results attained by the Zenner, Bilgram, Reuleaux, and Elliptical diagrams are studied from the text book, after which the designing of the valve gears becomes a drawing-board pro-

cess. Each student before completing the work must design some form of standard engine valve and governor; the data being taken from trade catalogues and engines actually in use. *Senior. First semester, M. Th. F. Assistant Professor Scrugham.* (C 2)

Mechanical Engineering 10. Inspection Visits. It is the desire of the department to arrange for an inspection trip to the most important manufacturing establishments in the vicinity in order that the student may make a study of modern structures and methods in manufacture. The practical value of such excursions has long been recognized by such institutions as Kentucky State College, Rose Polytechnic Institute, Purdue University, Massachusetts Institute of Technology, Case School of Applied Science, and many others, where they have become regular features of the course. These trips are for Juniors and Seniors only. Professor Blessing and Assistant Professor Scrugham.

Mechanical Engineering 11. Electricity and Magnetism. Frictional Electricity, Magnetism, Current Electricity, Electrostatics, Electro-magnetics, Measurement of Currents, Thermo-electricity, Heat, Power and Light from Electric Currents, Inductance, Dynamos, Motors, Transformers, Electro-chemistry, Telegraphy, Telephony, and Electric Waves. *Prerequisite: Physics 2. Juniors. Second semester, M. T. F. Assistant Professor Scrugham.* (B 3)

Mechanical Engineering 12. Electrical Course. The studies pursued by those electing the electrical course will constitute largely those appearing in the regular Mechanical Engineering Course. The work in Kinematics, Machine Design, Dynamometers and Measurements of Power, and Valve Gearing are shortened, and subjects pertaining to Theory and Design of Dynamo-electric Machinery, Electrical Appliances, Power Transmission, etc., are given. Practical work will embrace dynamo and motor operating and testing. The thesis required for graduation will be of an electrical character, either a design or an investigation of existing machines. *Prerequisite: Mechanics 11. Both semesters. Hours to be arranged.* Assistant Professor Scrugham.

Mechanical Engineering 20. Thesis Work. The latter part of the second semester of the Senior year is given to thesis work. This consists of some new design of a machine or an original investigation of some subject congenial to the student's taste and included in the scope of the course. The subjects for these theses are assigned to the student by the head of the Mechanical Engineering Department; and the completed theses, together with the drawings and illustrations accompanying them, are kept on file that they may serve as references for future investigations. *Seniors. Second semester. Hours to be arranged.* Professor Blessing and Assistant Professor Scrugham. (.....)

TRADE CATALOGUE LIBRARY.

In order to familiarize the student in Mechanical Engineering with the different manufacturing firms throughout the country, and the progress they are making in perfecting engines, pumps, boilers, dynamos, etc., there has been added a trade catalogue library. The trade literature of to-day is gotten out in the most attractive form possible, and with an educational motive in view. Many catalogues are text books of a very high order, and

gotten out with the express idea of teaching the practical man the theoretical, and the theoretical man the practical, nature and advantages of the machine the firm is placing upon the market. The benefit derived by referring to these books, in connection with the class-room work, is at once apparent, renewed interest being shown by the student in his text-book work when he sees the practical and commercial applications of the theories he is studying.

XXX. MECHANIC ARTS.

Mechanic Arts 1. Wood Shop. The wood shop contains four power wood-turning lathes, one Fay Egan tilt-table jig-saw, one Fox wood trimmer, one combination wood planer and circular-saw machine, one band saw, one wood-paneling machine, one grindstone, twenty-four benches, and fifteen sets of wood-workers' tools. The work in this branch of the department is required of students in Mechanical Engineering, Civil Engineering, and Mining Engineering, and may be taken by any other male students desiring it, provided accommodations are at hand. At present there are thirty students. This work is carried through both semesters of the Freshman year, and the instruction is intended to familiarize the student with the use of hand and machine tools and with the most approved methods and processes followed in engineering construction. The text book used in connection with the practical work is: *Goss: Bench Work in Wood*. The bench work includes the following operations: Plowing, sawing, rabbeting, planing, notching, splicing, mortising, tenoning, dovetailing, framing, paneling, and the general use of carpenters' tools. The wood turning involves the various principles of lathe work in wood, and is carried on from a set of blue prints issued by the department for that purpose. Pattern-making, which gives the student discipline in the construction of patterns for foundry work, is taken only by students in Mechanical Engineering. *Freshmen. Both semesters. Hours to be arranged.* Mr. (Lab. 2)

Mechanic Arts 2. Forge Shop. The forge shop contains eight forges equipped with smithing tools, and is fitted with pressure and exhaust system piping and fans. The work in forging includes exercises in heating, bending, drawing, upsetting, plain welding, butt welding, lap welding, ring welding, tee welding, etc. In steel forging the exercises include the making and tempering of punches, drills, chisels, annealing, case-hardening and the making of a complete set of machine-cutting tools for the student's future use in the machine shop. *Sophomore. Both semesters. Hours to be arranged.* Mr. (Lab. 2)

Mechanic Arts 3. Machine Shop. The machine shop is equipped as follows: One shaper, three machine lathes, one drill press, one sensitive drill, one universal grinder, one milling machine, one pipe-cutting machine, one dry emery wheel, one wet emery wheel, four vises, an engine and a dynamo. Instruction in this work consists of vise work in iron, including surface chipping, surface filing, squaring and fitting, round filing, sawing, scraping, and polishing. Machine work in metals includes exercises in straight and taper turning, slotting, drilling, boring, planing, and screw cutting. Practice in the machine shops begins with a series of simple exercises teaching the proper use of the hammer, chisel, and file; the laying out of work, and the

use of the lathe, shaper, milling machine, etc. As the student becomes familiar with the use of tools and machines, he is given work on simple machine details and construction, and finally assembles the parts into the complete machine. *Freshman, 3 hours a week; second semester, hours to be arranged.* Mr. (Lab. 1)

XXXI. CIVIL ENGINEERING.

Civil Engineering 1a. Theory of Surveying. Construction, use, and adjustment of instruments. Methods employed in topographic, land, city, mining, and hydrographic surveys. Practical problems. Lectures and recitations. *Juniors. Both semesters, T. Th.* Professor (C 2)

Civil Engineering 1b. Field practice and office work. Adjustments of surveying instruments in the field; taking of notes for plane and topographical surveys and making of maps from them. Leveling. Plane table work. *Juniors. Both semesters, Th. F.* Professor (Field 2)

Civil Engineering 2. Highways and pavements. Construction and maintenance of county roads and city streets and pavements. Elements of expense and total cost of construction and maintenance. *Sophomores. Second semester M. W. F.* Professor (A 3)

Civil Engineering 3. Materials of Construction. Properties and characteristics of materials used in engineering construction. Preparation for use, methods of testing strength and quality. *Sophomores. First semester, M. W. F.* Professor (A 3)

Civil Engineering 4. Strength of Materials. *See Mathematics 10.*

Civil Engineering 5a. Theory of railroad surveying. Simple, compound, and reversed curves. Transition curves. Switch work. Cross-section work. Earthwork computations. *Seniors. Second semester, M. W. F.* Professor (A 3)

Civil Engineering 5b. Railroad field practice and mapping. Running of curves. Cross-section work, earthwork computations. A complete survey and location of a line is required with computations and mapping. *Seniors. Second semester, 2 afternoons.* Professor (Field 2)

Civil Engineering 6. Framed Structures. Computation of stresses in roofs and simple bridge trusses by analytical and graphical methods. Drawing. *T. W.* Skew and irregular trusses. Positions of any system of concentrated moving loads for greatest stresses. *Juniors. Second semester, Th. F.* Professor (2, Lab. 1)

Civil Engineering 7. Structural Design. Making complete detailed designs of several structures, such as plate girder, roof and bridge trusses. *Seniors. First semester, 3 periods; second semester, 2 periods.* Professor (.....3) (.....2)

Civil Engineering 8. Sewer Systems. Sewerage and surface drainage of cities and towns. Separate and combined systems of sewers with details of construction. *Juniors. Second semester, T. Th.* Professor (B 2)

Civil Engineering 9. Dam Construction. Dams of timber, stone, and earth. Lectures and recitations. *Seniors. First semester, M. W. F.* Professor (.....3)

Civil Engineering 10. Water Supply and Irrigation. Collection, storage, and distribution of water for public or domestic use. Irrigation of land. Location, construction, and maintenance of canals and reservoirs. *Seniors.* *First semester, M. W. F.* Professor (.....3)

Civil Engineering 11. Higher Surveying. Discussion of the figure of the earth; the measurement of base lines, and the methods of observing and making reductions in triangulation, mapping of large areas, trigonometric and precise spirit levelling. *Seniors. First semester.* Professor (.....)

XXXII. DRAWING.

Drawing 1. Freehand Drawing. Plates of geometrical figures, conventional signs, lettering, etc. *Freshmen. First semester, M. T. W. Th. F., M. E., C. E., Mines.* Mr. (E 2)

Drawing 2. Mechanical Drawing. Plates, lettering, machine parts, etc. *M. E., C. E., Mines. Prerequisite: Drawing 1. Second semester, M. T. W. Th. F.* Mr. (E 2)

Drawing 3. Elementary Machine Design. Drawing and design of machine parts, modern shop arrangement, etc. *M. E., C. E. Prerequisite: Drawing 2. First semester, M. T.* Mr. (D 2)

Drawing 4. Descriptive Geometry. *Faunce: Descriptive Geometry. M. E., C. E., Mines. Prerequisite: Drawing 2. Second semester, M. T. W. Th. F.* Mr. (D 2)

Drawing 5. Kinematics and Mechanism. *Junior. First semester, M. T. W. Th. F.* Assistant Professor Scrugham. (.....5)

Drawing 6. Steam Boiler Design. *Junior. Second semester, M. T. W. Th. F.* Assistant Professor Scrugham. (.....5)

Drawing 7. Advanced Machine Design. *Senior. Both semesters, M. T. W. Th. F.* Assistant Professor Scrugham. (.....5)

Drawing 8. Valve and Governor Design. *Senior. Second semester, M. T. W. Th. F.* Assistant Professor Scrugham. (.....5)

XXXIII. MILITARY SCIENCE AND TACTICS.

Military 1. Practical and theoretical. The practical instruction consists in squad, company, and battalion drills, both in close and extended order; small-arms target practice; guard duty; advance and rear guards and outposts; marches; ceremonies; and First Aid to the Injured. The theoretical instruction consists in recitations on the infantry drill regulations; the manual of guard duty; small-arms firing regulations; the articles of war; and company records and papers relating to enlistment, discharge, pay, rations, clothing, equipment, and the regulation of military duties. In addition lectures on the following subjects are delivered: The organization of the United States Army, including volunteers and militia; patrols and outposts; marches; camps and camp hygiene; lines and bases of operations; attack and defense of advance and rear guards and outposts; and convoys. *All male students. Both semesters, M. T. W. Th. F.* Captain Brambila.

THE STATE NORMAL SCHOOL

THE STATE NORMAL SCHOOL.

FACULTY.

JOSEPH EDWARD STUBBS.....	President
ROMANZO ADAMS	Dean, Professor of Education
JEANNE ELIZABETH WIER	Associate Professor of History and Civics
P. BEVERIDGE KENNEDY.....	Professor of Botany
PETER FRANDSEN	Professor of Physiology and Psychology
FRANCES ELIZABETH SHORT.....	Assistant Professor of Education
ALICE L. LAYTON	Instructor in Vocal Music
KATHERINE LEWERS	Instructor in Drawing

FOUNDATION.

The Legislature shall have power to establish Normal Schools, and such different grades of schools from the primary department to the University as in their discretion they may deem necessary. *State Constitution, Article XI, Section 5.*

THE NORMAL SCHOOL.

In accordance with the Constitution of the State, the Legislature has made provision for a Normal School as a coördinate department of the University.

In the State of Nevada the high school is an integral part of the public school system, which includes the primary, grammar, and high schools.

The State Normal School offers courses of instruction, both professional and liberal, for students who wish to become teachers in the grammar and high schools of Nevada and other States.

The State Normal School is organized to provide for the professional training of teachers. As a coördinate department of the State University, it is possessed of the advantages offered by the well-equipped laboratories and the library of the University.

AIMS.

The purpose of the State Normal School in providing instruction in Education is as follows:

1. To educate students for positions in the public schools.
2. To promote the study of educational science.
3. To teach the history of education and of educational systems and doctrines.
4. To secure to teaching the rights and advantages of a profession.
5. To give unity to our State educational system.

PRACTICE TEACHING.

The public schools of Reno with an attendance of over a thousand pupils and with a strong teaching corps constitute both model school and practice

school for the Normal School. Each Senior student devotes four weeks to observation and teaching in the public schools under the joint supervision of the Dean of the Normal School and the Principal of the Public Schools, the regular teachers acting as model and critic teachers.

COURSES OF STUDY.

Two courses of study are offered in the Normal School. (1) The Advanced Course, and (2) the Elementary Course.

The Advanced Course is identical with the Liberal Arts or the General Science Course in the College of Arts and Science, except that during the Junior and Senior years it includes Courses 4, 5, 6, 7, and 8 in Education, and Psychology 1. Students graduating from this course are entitled to a State teachers' certificate of high-school grade. For information concerning this course see pages 52-57 of this Register.

The Elementary Course consists of one year of professional work for high school graduates. Students graduating from this course are entitled to a State teachers' certificate of grammar grade.

ELEMENTARY COURSE.

CONDITIONS OF ADMISSION.

1. Entrance to the Normal School shall be by examination, excepting that a graduate of an accredited school will be received without examination in those subjects in which such school is accredited.

2. Candidates for admission who are not graduates of accredited schools must present themselves for examination in the common school subjects, and in such high school subjects as they may wish credit for.

3. Any school of the State may be accredited in such subjects of high-school grade as it may be able to complete in a satisfactory manner.

4. High schools of other States, if accredited by a State University or other university of first rank, will be recognized in so far as the work done is equivalent to the work required here. The applicant from such a school must supply the evidence that the school is accredited.

5. All students entering the Normal School must pass an examination in English composition, whether from an accredited school or not. This examination will be held in September of each year.

6. All new students of whatever rank should meet the Committee on Admission.

ADMISSION REQUIREMENTS.

Subjects and Units.

Latin, French, or German.....	10 units ¹
English	15 units
Mathematics	15 units
History	10 units
Physics	5 units
Elective.....	5 units

¹A unit, as a measure of the amount of work done, is represented by one recitation a week throughout the year, each recitation being of not less than thirty-five minutes duration. Fifteen units represent five recitations a week throughout three years; two and one-half units, a half year's work; ten units, two years' work.

*Pass. Studies
require
full training
7 wks. course*

The five elective units may be selected from the subjects listed below.

Latin, French, or German.....	5 units
Physical Geography.....	2½ units
Bookkeeping.....	2½ units
Botany.....	2½ or 5 units
Physiology.....	5 units
Zoölogy.....	5 units

SPECIAL STUDENTS.

Persons who are not candidates for a degree, and who wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examination on the recommendation of the professor under whom the special studies are to be taken; but the professor concerned may impose any test by examination or otherwise that he may deem advisable. Special students must, however, be at least twenty years of age. For adequate reasons exceptions to the above rule may be made by the Faculty. Special students are admitted to work only in the University courses. A failure on the part of any special student to maintain a good standing in the special studies to which he is admitted will at once sever his connection with the University.

REQUIREMENTS FOR GRADUATION.

The Normal School diploma is awarded to students who have been in residence one year, and who have completed in a satisfactory manner the work outlined in the following course of study:

COURSE OF STUDY.

Education 1 (Theory).....	3	3
Education 2 (Common-School Subjects).....	5	5
Education 4 (Practice Teaching).....	.....	.....
History (Educational Aspects).....	.....	.....
Hygiene 1.....	3	3
Zoölogy 1.....	3	.....
Botany 1.....	.....	3
Music 1.....	1	1
Drawing 11.....	1	1

COURSES OF INSTRUCTION.

Music. Vocal Music. Systematic instruction in the elements of vocal music is given, with especial reference to the needs of teachers in the public schools. *Both semesters. Hours to be arranged.* Mrs. Layton. (.....1)

History. The teaching of American history in the common schools. *Time to be arranged.* Associate Professor Weir. (.....)

Education 1. Educational Theory. The aim of this course is to present the principles of education as based upon those facts of psychology, child-study, and sociology which are of most direct importance to the teacher. The aim, the organization, management, and general method of study and instruction are included. The educational values of the various subjects of

common-school study are considered. *Both semesters, M. W. F.* Professor Adams. (.....3)

Education 2. Common-school Subjects. The aim of these courses is two-fold: First, to give the students an opportunity to make exact and broad their knowledge of the various subjects taught in the common schools; and, second, to assist the student to a clear comprehension of the educational values of these subjects, and to an intelligent knowledge of the methods of instruction best adapted to the realization of these values. Subjects included in these courses are reading, writing, spelling, composition and grammar, arithmetic, and geography. *Both semesters, M. T. W. Th. F.* Assistant Professor Short. (B 5)

Education 4. Practice teaching. Each student is required to devote four weeks to observation and teaching in the public schools of Reno under the direction of the Professor of Education and the Principal of Schools. This practice work is preceded by preparation consisting of a study of the Reno course of study and of lesson planning. *One month in second semester.* Professor Adams and Assistant Professor Short. (.....)

Zoölogy 1. General Zoölogy. An introduction to the whole field of Zoölogy; the systematic positions and relations of animals, the differentiation of complex systems of tissues and organs from the simple; the activities, habits, and adaptations of animals, the main facts of development, the theory of evolution, etc. In the laboratory a number of animal types are studied, beginning with the simplest and proceeding to the most highly organized. *First semester, T. Th.* Professor Frandsen. (C 2) (Lab. 2)

Hygiene 1. Physiology and Hygiene. Special attention will be given in the second semester's work to the subject of Hygiene, including personal hygiene, hygiene of contagious diseases, emergencies, etc. Laboratory work will consist of some microscopic work on the tissues and organs, simple physiological experiments and demonstrations, chemical experiments illustrative of the process of digestion, and the dissection of vertebrate organs. *Laboratory, Friday, 1 to 3. Both semesters, M. W. F.* Professor Frandsen. (D 3)

Botany 1. Structural and Physiological Botany. A study of the fundamental principles of plant life and growth and the adaptations of the higher plants to environmental forces. Two lectures and two laboratory periods a week. Illustrated by lantern slides and demonstrations. *Second semester, T. Th.* Professor Kennedy. (D 4)

Drawing 10. The work of this course has especial reference to the needs of teachers. Attention is given to the observation and delineation of forms in nature, to ornamental design, to the conventionalizing of plant forms, and to harmony of color. *Both semesters. Hours to be arranged.* Miss Lewers. (.....1)



THE HIGH SCHOOLS

- 1. THE PREPARATORY HIGH SCHOOL**
 - 2. THE COMMERCIAL HIGH SCHOOL**
-
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THE HIGH SCHOOLS.

FACULTY.

JOSEPH EDWARD STUBBS.....	President
SAMUEL BRADFORD DOTEN.....	Principal Preparatory High School, Mathematics
ROBERT LEWERS.....	Principal Commercial High School, Commercial Subjects
JAMES EDWARD CHURCH, JR.....	Latin
MISS LAURA DE LAGUNA	French
MISS JEANNE ELIZABETH WIER	History and Civics
MISS MILDRED MAUDE WHEELER	German
MISS KATE BARDENWERPER	Domestic Arts and Science
CHARLES T. BOYD ¹	Military Science and Tactics
BERNARD ALFRED ETCHEVERRY.....	Physics
JOHN ALLEN REID	Physical Geography
MISS LOTTA SIBYL HOWE	English
MISS ADA E. MORSE	Latin
MISS MARGARET ESTELLE MAYBERRY	Latin
MISS MARY E. BACON	Latin
ROBERT MAURO BRAMBILA	Military Science and Tactics

AIM.

The Preparatory High School was established to afford adequate preparation for the University and to offer the advantages of thorough high school training to the many young people who live in sections of the State where there are no high schools. *In all cases where high schools are established, students should finish the work in the home school, and not seek admission to the University High School.*

The Commercial School has the distinct aim of preparing young people for a business life, but without sacrificing the solid requirements of a complete high school course of study. The course of study is equal to the requirements in the better class of English high schools, and includes a very complete and thorough discipline in stenography, bookkeeping, typewriting, and commercial law upon the foundation of a sound English education.

CONDITIONS OF ADMISSION.

1. Admission to the High Schools will, in general, be by examination upon the subjects usually completed within the eight years of the primary and grammar grades, viz: arithmetic, grammar, geography, elementary United States history, reading, and penmanship; and candidates from the Reno Public Schools must pass an examination commensurate in difficulty with the examinations in those schools. Examinations may be taken in the can-

¹Assigned to service as Major 4th Battalion Philippine Scouts, April, 1905.

didate's home school, or at the office of the County Superintendent, to whom the necessary examination questions will be sent. The papers must in all cases be returned to the Committee on Entrance at the University for grading. Blank certificates for the above information will be sent free upon application to Mr. S. B. Doten, Principal of the Preparatory High School.

2. But graduates from Nevada ungraded or grammar schools where there is no high school in connection will be admitted on credentials, provided the teacher has been accredited. Such teacher is one who has established the efficiency of his instruction through the success of his pupils in passing the entrance examination and in maintaining satisfactory standing as a student at the University.

3. Candidates from grammar schools of recognized standing in other States or from ungraded or grammar schools where a careful system of supervision is enforced will also be admitted on credential.

SPECIAL STUDENTS.

Special students are not admitted to work in the Preparatory High School.

Special students may, however, be admitted to work in the Commercial High School on the recommendation of the principal of that school, providing such students be at least twenty years of age. For adequate reasons exception to the above rule may be made by the Faculty.

ADVANCED STANDING.

Advanced standing will be granted by the Committee on Admission to the High Schools only upon recommendation of the departments concerned.

GRADUATION.

Students who satisfactorily complete all the studies of the Latin or Science Course of the Preparatory High School will receive a diploma of graduation.

In the Commercial High School, diplomas will be granted only to those who complete the course of study with signal credit. Diplomas will be granted at any time upon the satisfactory completion of the course.

COURSES OF STUDY.

PREPARATORY HIGH SCHOOL.

The Latin Course admits to all schools of the University, the Science Course to all schools except the School of Liberal Arts.

<i>Latin Course.</i>	JUNIOR HIGH.	<i>Science Course.</i>
English a.....	5	English a.....5
Latin a.....	5	Bookkeeping a.....2
History a, English.....	3	Physical Geography a.....3
Mathematics a.....	5	Mathematics a.....5
Domestic Science a, Girls.....	1	History a, English.....3
Manual Training, Boys.....	1	Domestic Science a, Girls.....1
Physical Training, Girls.....	1	Manual Training, Boys.....1
Military Drill, Boys.....	1	Physical Training, Girls.....1
		Military Drill, Boys.....1

MIDDLE HIGH.

English b.....	5	English b.....	5
Latin b.....	5	German a or French 1.....	5
History b, Ancient.....	3	History b, Ancient.....	3
Mathematics b.....	5	Mathematics b.....	5
Domestic Science b, Girls.....	1	Domestic Science b, Girls.....	1
Manual Training, Boys.....	1	Manual Training, Boys.....	1
Physical Training, Girls.....	1	Physical Training, Girls.....	1
Military Drill, Boys.....	1	Military Drill, Boys.....	1

SENIOR HIGH.

English c.....	3	English c.....	3
History c, American.....	4	History c, American.....	4
Latin c.....	4	German a or French 2.....	4
Physics a.....	4	Physics a.....	4
Mathematics c.....	3	Mathematics c.....	3
Domestic Science c, Girls.....	1	Domestic Science c, Girls.....	1
Manual Training, Boys.....	1	Manual Training, Boys.....	1
Physical Training, Girls.....	1	Physical Training, Girls.....	1
Military Drill, Boys.....	1	Military Drill, Boys.....	1

Drills—Throughout the three years there will be exercises in drawing, writing, singing, and public speaking.

COMMERCIAL HIGH SCHOOL.

JUNIOR HIGH.

English a.....	5	Domestic Science a, Girls.....	1
Bookkeeping a.....	2	Manual Training, Boys.....	1
Physical Geography a.....	3	Physical Training, Girls.....	1
Typewriting a (5 times a week).....	2	Military Drill, Boys.....	1
Mathematics a.....	5		

MIDDLE HIGH.

English b.....	5	Domestic Science b, Girls.....	1
Stenography a (5 times a week).....	3	Manual Training, Boys.....	1
Mathematics b.....	5	Physical Training, Girls.....	1
Commercial Law a and Bookkeep- ing b (5 times a week).....	3	Military Drill, Boys.....	1

SENIOR HIGH.

English c.....	3	Domestic Science c, Girls.....	1
History c, American.....	4	Manual Training, Boys.....	1
Physics a.....	4	Physical Training, Girls.....	1
Mathematics c.....	3	Military Drill, Boys.....	1
Stenography b (8 times a week).....	5		

COURSES OF INSTRUCTION.

LATIN.

Latin a. Beginning Latin. *Collar and Daniell: First Latin Book. Col-
lar; New Gradatim. D'Ooge: Colloquia Latina. Junior High, Preparatory.*
(D 5)

Latin b. Second year Latin, Selections, Caesar's Gallic War. *Greenough,*

D'Ooge, and Daniell: Second year Latin. *D'Ooge*: Latin Composition. *D'Ooge*: Easy Latin for Sight Translation. *Bennett*: Latin Grammar. *Middle High, Preparatory*. (A.....)

Latin c. Ovid, Mythology, Cicero. *Kelsey*: Selections from Ovid. *Gayley*: Classic Myths. Cicero's In Catilinane. *Senior High, Preparatory*. *M. T. Th. F.* Miss Morse. (F 4)

FRENCH.

French 1. Elementary French. Thorough drill in grammatical principles and in translating simple English into French, and French into English. *Fraser and Squair*: French Grammar. *Rollins*: French Reader. Selections of French poetry will be committed to memory. *Middle High, Preparatory*. *M. T. Th. F.* Associate Professor de Laguna. (D 4)

French 2. Translation and Composition. The study of French grammar is continued, special stress being placed on the subjunctive and various idiomatic constructions. *About's* Mère de la Marquise, *Dumas'* La Tulipe Noire, *Lamartine's* Jeanne d'Arc, *Fontaine's* Douze Contes Nouveaux, and some historical and scientific French will be read. *François*: French Composition. *Middle High, Preparatory*. *M. W. F.* Associate Professor de Laguna. (C 3)

GERMAN.

German a. Beginning German. The principles of German grammar will be carefully studied; easy German will be translated into English, and simple English into German. Selections from German poetry will be committed to memory. *Lange*: German Method. *Huss*: German Reader. *Middle High, Preparatory*. *M. T. W. Th. F.* Instructor (.....5)

German b. Rapid Reading, Prose Composition. *Leander*: Träumereien. *Arnold*: Ein Regentag auf dem Lande. *Baumbach and Wildenbruch*: Es war Einmal. *Guerber*: Märchen und Erzählungen, and other simple stories and plays. *Senior High, Preparatory*. *M. W. Th. F.* Instructor (.....4)

ENGLISH.

English a. 1. Literature. *Gray's Elegy, *The Deserted Village, *The Ancient Mariner, *Byron (Selections), *Silas Marner, *Ivanhoe, *The Alhambra, Irving's Life of Washington, Franklin's Autobiography.

2. Word Analysis. *Swinton*.

3. Composition. *Scott and Denny*: Composition—Literature. *Junior High*. *M. T. W. Th. F.* Instructor (.....5)

English b. 1. Literature. *The Merchant of Venice, *Sir Roger de Coverly, *Sir Launfal, *Wordsworth (Selections), *Webster's Bunker Hill Orations, The Vicar of Wakefield, Homer's Iliad, King Lear, Burns (Selections), Parkman's Oregon Trail, The Tale of Two Cities.

2. Grammar. *Whitney and Lockwood*.

3. Composition. *Scott and Denny*: Composition—Literature. *Middle High*. *M. T. W. Th. F.* Instructor (.....5)

English c. 1. Literature. *Chaucer's Prologue, *Julius Cæsar, *Milton (Selections), *Webster's Reply to Hayne, *Emerson's Essays (3), English

The pieces marked with asterisk (*) are required; the other pieces are to be selected from to complete the required amount of work.

Ballads, Lowell's Democracy, Paradise Lost I and II, Macbeth, Shelley (Selections), Lamb's Essays, Bacon's Essays, Macaulay's Essays on Addison and Milton.

2. Composition. *Senior High. M. T. W. Th. F.* Instructor..... (.....5)

English d. Grammar. Review in technical English grammar and composition for Freshmen who are deficient in the admission requirements in English. *Hours to be arranged.*

HISTORY AND CIVICS.

History a. History of England. A short course dealing with important epochs rather than a continuous narrative of political events. The purpose of the course is to give a general view of the literary, industrial, and constitutional development of the English people. *Junior High, M. W. F.* Associate Professor Wier. (.....3)

History b. Ancient History. This course during the first half-year deals with the characteristics of the early Oriental and the primitive American peoples. It is designed to give the student an insight into the origin and development of civilization. The second half-year is devoted to a study of Greek and Roman institutional ideas. Constant reference is made to the work of the previous semester. *Middle High, M. W. F.* Associate Professor Wier. (.....3)

History c. American History and Civics. A study of the development of the political, economic, religious, social, and educational life in America. The expansion of Europe and especially of England in American explorations, commerce, and settlement will be considered; also the development of English political principles. Civil government will be studied in connection with the history of the development of our institutions. *Senior High, M. T. Th. F.* Associate Professor Wier. (.....4)

MATHEMATICS.

Mathematics a. 1. Academic Algebra. Thorough drill in the fundamental processes of addition, subtraction, multiplication, and division, fractions, and equations of the first degree.

2. Arithmetic. Review, the solution of problems in arithmetic by algebraic methods, and a thorough study of the metric system of weights and measures. *Juniors. Both semesters, M. T. W. Th. F.* Principal Doten. (.....5)

Mathematics b. 1. Academic Algebra. Powers and roots, equations of the second degree, fractional equations, the theory of exponents.

2. Plane Geometry. Books I, II, and III of Beman and Smith's Plane Geometry. *Middle High. Both semesters, M. T. W. Th. F.* Principal Doten. (.....5)

Mathematics c. 1. Plane Geometry. Books IV and V of Beman and Smith's Plane Geometry.

2. Solid Geometry. Beman and Smith's Solid Geometry. *Seniors. Both semesters, M. T. W. Th. F.* Principal Doten. (.....3)

PHYSICAL GEOGRAPHY.

Physical Geography a. The course purposes to give the students a working knowledge of the surface of the earth, the causes operating in its division

*Insert
Physics*

into various forms, and the relation of all to human needs. The students are encouraged to make original observations on the surrounding country and are aided in drawing correct inferences and conclusions. When practicable, short field excursions are taken, which are supplemented by illustrated lectures on other localities. *Juniors, Preparatory High (Science) and Commercial High.* M. W. F. Professor Reid. (.....3)

BOOKKEEPING.

Bookkeeping a. The work embraces the preliminary and intermediate work given in the Sadler-Rowe publications, to impart the fundamental principles of accounting. *Juniors.* Principal Lewers. (.....2)

Bookkeeping b. This course continues with the Marshall-Goodyear voucher accounting, and is designed to make the student thoroughly familiar with corporation bookkeeping and with modern systems of accounting, labor-saving devices, card systems, etc. *Middle High, Commercial.* Principal Lewers. (.....2)

COMMERCIAL LAW.

Commercial Law a. The course includes negotiable paper as outlined in McMaster's Commercial Paper. It touches upon other topics germane to business law and the text is supplemented with lectures and references to actual cases. Text: McMaster's Irregular and Regular Commercial Paper; Gano's Commercial Law. *Senior High, Commercial.* Principal Lewers. (.....1)

STENOGRAPHY.

Stenography a. The object of the first year's work is to ground the student thoroughly in the principles of the art of stenography. *Dement: Pitmanic Shorthand.* *Middle High, Commercial.* M. T. W. Th. F. Principal Lewers. (.....3)

Stenography b. The second year's work is in the nature of laboratory work, and will include dictation in typewriting as well as in stenography. *Painstaking attention will be given to spelling and English composition.* A good commercial speed is required, but the students will be advanced in this respect as far as circumstances will permit. Stenographers are in great demand, but they must be capable to hold good positions. *Senior High, Commercial.* *Eight times a week.* Principal Lewers. (.....5)

TYPEWRITING.

Typewriting a. This work consists of the exercises given in the Van Sant charts. The first part of this consists of word exercises, and this is followed by letter writing, copying legal documents, testimony, etc. The department is equipped with three Remingtons, two Smith-Premiers, two Bar-Locks, one Century—all of the latest style. *Junior High, Commercial.* M. T. W. Th. F. Principal Lewers. (.....2)

DOMESTIC ARTS AND SCIENCE.

Domestic Arts and Science a. 1. Fundamental principles of plain sewing—undergarments, shirt waists. Study of implements and appliances used in dressmaking. Taking measurements. Draughting skirt. Finishing skirt

for trimming or draping. Choice of materials as to color and application to dress. Study of form, proportion, and line relating to ornament in dress. Plans for completing skirts. Cutting waists from patterns draughted by students of advanced grades from measurements taken by members of the class. Basting, fitting, trimming. General finish.

2. Equipment and care of kitchen. Practical cookery. Effects of heat upon foods. Adaptation of foods to needs of the body. Proportions in flour mixtures. Planning and cooking of simple meals, according to approved dietetic standards. Yeasts. Breads. *Junior High. Two periods, M. F.* Miss Bardenwerper. (.....1)

Domestic Arts and Science b. 1. Color and textiles; relations and uses in personal adornment. Growth of silk and wool; manufacture of fabrics. Measurements of different figures; draughting plain waist according to different measurements. Cutting and matching plaids, stripes, and figures for waists; making and trimming the same. Draughting and making dress on the evening gown form. Designing and making student's own dress.

2. Cereals, vegetables, soups, meats, made-over dishes. Broiling, roasting. Salads (and dressings). Batters, breads, plain pastry, cake, puddings, sauces. Table laying. Marketing. *Middle High. Two periods, M. F.* Miss Bardenwerper. (.....1)

Domestic Arts and Science c. 1. Advanced draughting. Making dinner or evening dress. Choice of materials for gowns for special occasions. Handling of velvet. Making models of inexpensive materials to test the design. Child's dress—materials, draughting, cutting, etc. Coats and jackets, materials used. Practice in making pockets; applying same to garment. Tailor button holes. Lining and finish of coat. Collar making.

2. Soufflés, croquettes. Entrées, sauces. Roast game. Desserts; frozen creams. Preparation and serving of dinners, luncheons, and teas. Cost of living. Dietetics, sanitation. *Senior High. Two periods, M. F.* Miss Bardenwerper. (.....1)

MANUAL TRAINING.

The character of the work and instruction in Manual Training have not yet been formulated.

PHYSICAL TRAINING.

Physical Training is required of all young women who are qualified to take the work in the gymnasium. Fuller announcement of the work will not be made until a physical director has been obtained.

MILITARY SCIENCE.

Military 1. All students, except those physically disqualified, are required to drill regularly every day. The practical instruction consists in squad, company, and battalion drills. The theoretical instruction consists in recitations on infantry drill regulations. *All male students. M. T. W. Th. F.* Captain Brambila. (.....1)

ENROLLMENT OF STUDENTS

ENROLLMENT OF STUDENTS FOR THE ACADEMIC YEAR 1903-1904.

POST-GRADUATES.

Hall, Joseph Winchester	Drawing	Reno
Nash, Maud E.	Stenography	Reno
Ward, Grace Viola	Stenography	Reno

SENIORS.

Arnot, Laura A.	Liberal Arts	Markleeville, Cal.
Blakeslee, Mabel Hayward	Liberal Arts	Reno
Cameron, Jeanette Evelyn	Liberal Arts	Virginia City
Catlin, William Prince	Mines	Carson City
Caton, Albert Joseph	Liberal Arts	Gold Hill
Comerford, James Vincent	Liberal Arts	Virginia City
Delonchant, Fred Joseph	Mines	Reno
Ede, Allen Samuel	Mines	Reno
Evans, Benjamin Allen	Mechanical Engineering	Reno
Fay, Lillian Nevada	Liberal Arts	Sheridan
Gibson, Agnes Pearl	Liberal Arts	Reno
Kearney, William Maxwell	Mines	Empire
Nathan, Fred August	Mechanical Engineering	Reno
Plumb, Mabel Grant	General Science	Tuscarora
Price, James Henry	Mines	Virginia City
Rammelkamp, Georgia Anna	Liberal Arts	Dayton
Ruddell, Mary Alice	Liberal Arts	Lovelock
Smith, Frank T.	Mines	Reno
Thompson, Frank Philson	Mechanical Engineering	Pioche
Thompson, William Bryant	Mechanical Engineering	Reno
West, George Franklin	Mines	Yerington
Woodward, Anna	Liberal Arts	Tuscarora
Wright, Nathaniel Davis	Mechanical Engineering	Reno

JUNIORS.

Bacon, Mary	Liberal Arts	Reno
Berry, Emily	Liberal Arts	Sattley, Cal.
Bradley, F. Dean	Mines	Pallsade
Brannin, Lucy Rebecca	Liberal Arts	Wadsworth
Bulmer, Halbert Boswell	Mines	Virginia City
Chism, Harry Cyrus	Mines	Reno
Cooke, Mary Elizabeth	Liberal Arts	Dayton
Graham, Frank Warner	Mines	Reno
Hamlin, Helen Hale	Liberal Arts	Sierraville, Cal.
Hand, Catherine	Liberal Arts	Sonora, Cal.
Hershiser, Beulah	Liberal Arts	Reno

Kelly, Mark M.	Civil Engineering	Crescent, Cal.
Leavitt, Edgar I.	General Science	Yerington
Louderback, Harold	Liberal Arts	San Francisco, Cal.
Maxwell, Alice Henrietta	Liberal Arts	Reno
Mayberry, Marguerite Estelle	Liberal Arts	Reno
Nesbitt, James	Mines	Delamar
O'Hara, Philip John	Liberal Arts	Virginia City
O'Neill, William James	Mechanical Engineering	Reno
Palmer, Walter E. S.	Mines	Reno
Pearson, William A.	Mines	Virginia City
Pike, LeRoy Francis	Liberal Arts	Reno
Pope, William Joseph	Mines	Virginia City
Smith, Cassius Crowell	Mines	Reno
Smith, Claude Leslie	Mines	Reno
Souchereau, Obeline Lydia	Liberal Arts	Verdi
Spellier, Louis A.	Mechanical Engineering	Taylorville, Cal.
Standerwick, Harry Maxwell	Liberal Arts	Reno
Stark, Charles William	Mines	Reno
Steckle, Abram H.	Mechanical Engineering	Reno
Wilkerson, Harry Thomas	Mechanical Engineering	Reno
Wise, Ollie Nevada	General Science	Battle Mountain
Wright, John William	Commerce	Reno

SOPHOMORES.

Arms, Mary Emeline	Liberal Arts	Vinton, Cal.
Black, William Clair	Mechanical Engineering	Deeth
Blake, Florence T.	Liberal Arts	Virginia City
Blevins, Dollie Adeline	Normal	Peko
Bowler, Emma	Liberal Arts	Hawthorne
Brambila, Juan Lino	Mines	San Francisco, Cal.
Cazier, Helen Elizabeth	Liberal Arts	Wells
Cazier, Henry Hallowell	Mines	Wells
Chase, Sarah	Normal	Reno
Davis, Henry F. D.	Mines	Elko
Elliott, Eloise Elizabeth	Normal	Bridgeport, Cal.
Friesell, Frank McClaren	Mechanical Engineering	Pittsburg, Pa.
Goble, Alma	Liberal Arts	Wells
Hamlin, Alfred Street	Liberal Arts	Sierraville, Cal.
Hamlin, Eunice Edna	Normal	Sierraville, Cal.
Hardwick, Alice Ellena	Liberal Arts	Silver City
Harrington, Earl Wilmington	Mines	Reno
Hibbard, Geraldine Conger	General Science	Reno
Hobart, Maude Alice	Liberal Arts	Virginia City
Hoffmann, Gustav Everett	Mines	Reno
Jameson, Curry	Mechanical Engineering	Reno
Jones, Harry Lawrence	Mines	Elko
Jones, Wendell Phillips	Mines	Eureka
Kerby, Edward Eugene	Mines	Reno
Knemeyer, Bertha Kate	Liberal Arts	Yerington

Marzen, Ethel Louise	Liberal Arts	Truckee, Cal.
McBride, Bonnifield Gerald	Mines	Elko
McDermott, Laura	General Science	Virginia City
McDonald, Daniel M.	Liberal Arts	Ely
McMullen, Lulu	Liberal Arts	Deeth
Morse, Ada Eliza	Liberal Arts	Wadsworth
O'Brien, William James	Mines	Carson City
Peterson, Harriet Irene	Liberal Arts	Reno
Pike, Frances Ella	Liberal Arts	Reno
Regil, Emma Claribel	Normal	Eureka
Ross, Reine Virginia	Liberal Arts	Virginia City
Scott, John David	Mines	Battle Mountain
Sielaff, Alwine Emma	Liberal Arts	Reno
Smiley, John Albert	Mechanical Engineering	Deeth
Snapp, Mabel	Liberal Arts	Rebel Creek
Taylor, Chester Carlton	Mines	Silver City
Updike, Daniel Haliday	Mines	Reno
Weathers, Leland Stanford	Mechanical Engineering	Deeth
Weeks, Sadie Janette	Liberal Arts	Wells
Welsh, Robert	Mechanical Engineering	Lovelock

FRESHMEN.

Bonnifield, Harry L.	Civil Engineering	Winnemucca
Borden, Waite Ernest	Mines	Verdi
Boyle, Alexander M.	Mines	Dayton
Bunch, Georgia G.	Liberal Arts	Verdi
Cahill, Alice	Normal	Silver City
Champagne, James Arthur	Mechanical Engineering	Genoa
Comerford, Edwin C.	Liberal Arts	Virginia City
Conaway, Margaret A.	Normal	Big Meadows
Curran, Andrew Charles	Mines	Virginia City
Davidovich, Milan	Mines	Sodaville
Ezell, James Madison	Mines	Gardnerville
Ezell, Lawrence	Mines	Gardnerville
Goldstein, Louis	Mines	Gardnerville
Hart, Chester Arthur	Mines	Olivet, Mich.
Hart, James	Mines	Reno
Hunewill, Lucile Eva	Liberal Arts	Bridgeport, Cal.
Knox, Cyril Hugh	Mechanical Engineering	Reno
Leavitt, James Dwight	Mechanical Engineering	Yerington
Levy, Leo Samuel	Liberal Arts	Virginia City
Lonkey, Lloyd Christian	Civil Engineering	Verdi
Lowrey, Georgella	Normal	Reno
Mack, Irene Myrtle	Liberal Arts	Reno
McLeod, Angus	Mines	Yerington
Madden, Zita	Liberal Arts	Newcastle, Cal.
Massey, William H.	Liberal Arts	Reno
McMullen, Rose	Normal	Deeth
Nadon, Joseph Alphonse	Mechanical Engineering	Reno

O'Leary, Robert Francis.....	Civil Engineering.....	Reno
Parry, Julius Robert.....	Mines.....	Reno
Peck, Bertha Levada.....	Liberal Arts.....	Mountain City
Peterson, Frank LeRoy.....	Mechanical Engineering.....	Carson City
Prouty, Anna Estella.....	Normal.....	Verdi
Sawyer, Robert William.....	Mines.....	Bridgeport, Cal.
Souchereau, Edna Josephine.....	Liberal Arts.....	Verdi
Spencer, John M.....	Mines.....	Reno
Stewart, Fred B.....	Mines.....	Lone Pine, Cal.
Todd, Rose E.....	Liberal Arts.....	Gardnerville
Walker, Lillian Anna.....	Normal.....	Palisade
Wheeler, Carl S.....	Agriculture.....	Reno

NORMAL SCHOOL.

SENIORS.

FRESHMEN.

Blevins, Dollie Adeline.....	Peko	Lowrey, Georgella.....	Reno
Chase, Sarah.....	Reno	McMullen, Rose.....	Deeth
Conaway, Margaret A.....	Big Meadows	Prouty, Anna Estella.....	Verdi
Elliott, Eloise Elizabeth.....	Bridgeport	Pursel, Eleanor.....	Wabuska
Hamlin, Eunice Edna.....	Sierraville, Cal.	Walker, Lillian Anna.....	Palisade
Regli, Emma Claribel.....	Eureka		

HIGH SCHOOL.

SENIORS.

Becker, Edith.....	English.....	Reno
Booth, Kenneth J.....	English.....	Tonopah
Cheatham, Austin.....	English.....	Reno
Coll, Edna.....	English.....	Reno
Evans, Pierce R.....	German.....	Reno
Freeman, Fred J.....	Latin.....	Sattley, Cal.
George, Edward Thomas.....	English.....	Battle Mountain
Harvey, Agnes Lucile.....	Commercial.....	Gardnerville
Hibbard, Sutherland.....	Latin.....	Reno
Hunewill, Camille.....	Latin.....	Bridgeport, Cal.
Lasher, Arthur Fayette.....	Latin.....	Kennedy
Mayo, Nellie.....	Commercial.....	Markleeville, Cal.
McMullen, Katie.....	Latin.....	Deeth
Miller, Isabel.....	Latin.....	Gardnerville
Parker, Amy J.....	Latin.....	Ely
Roeder, Charles Daniel.....	German.....	Delamar
Scott, Lucia.....	Latin.....	Ely
Springer, Sarah Jane.....	Commercial.....	Reno
Springer, Susie Belle.....	Commercial.....	Reno
Westfall, Vernon Andrew.....	Commercial.....	Lovelock
Whistler, Luella.....	Latin.....	Reno
Wilson, Fred William.....	English.....	Nordyke

MIDDLE.

Abbott, Charles A. H. L.	Latin	Reno
Arms, William Street	Latin	Vinton, Cal.
Arnot, John Paul	German	Markleeville, Cal.
Bane, Ellwood	German	Reno
Barker, Louisa	English	Carson City
Bryant Louise	Commercial	Wadsworth
Christensen, Hannah C.	Commercial	Reno
Darrah, Elizabeth C.	English	Willow Point
Daudel, George H. W.	English	Genoa
Evans, Alvaro	German	Reno
Gulling, Harry M.	German	Reno
Holland, Harry F.	Commercial	Yerington
Hunewill, Stanley H.	German	Bridgeport, Cal.
McKenzie, Alex	German	Reno
Menke, J. Henry	Commercial	Reno
Prouty, Ethel G.	Latin	Verdi
Ruddell, Jessie Imogene	Commercial	Lovelock
Ryan, Frank J.	Commercial	Caliente
Wedertz, Elmer Sinclair	German	Bridgeport, Cal.

JUNIORS.

Bell, Archie	Latin	Reese River
Berry, Edith	English	Sattley, Cal.
Blum, Clara	Latin	Reno
Brown, Mildred Inez	Latin	Reno
Coates, Rex Norris	German	Reno
Conaway, Dana R.	Commercial	Big Meadows
Corle, Fred B.	German	Reno
Crane, Marvel	Latin	Hobart Mills, Cal.
Hanks, George A.	Latin	Reno
Heise, Henry	Latin	Gardnerville
Hill, Grover C.	English	Verdi
Hogle, Mary E.	Latin	Sierraville, Cal.
Keough, Charles Vevereaux	Latin	Reese River
Leidy, George Royal	Commercial	Dyer
Liston, Frank	Commercial	Meadow Valley
McVicar, Mary Belle	Latin	Smith
Middleton, Wm. Alexander	Commercial	Lewis
Miller, Grace Elizabeth	Commercial	Reno
Nelson, Georgia	Commercial	Gardnerville
Nolan, George Francis	Latin	Reno
Porter, Chester Orlando	Latin	Verdi
Petree, Etna Beaufert	Commercial	Leetville
Rossi, Nicholas Louis	Commercial	Johnsville, Cal.
Rowe, Bessie	Latin	Hobart Mills, Cal.
Stock, Albert August	Commercial	Paradise Valley
Wertheimer, Dolph	Commercial	Delamar

Wilson, Beatrice M.	Latin	Battle Mountain
Wilson, Viva G.	Latin	Battle Mountain

SPECIAL STUDENTS.

Avery, Jessie Naomi	Commercial	Reno
Bailey, Roy Edwin	Chemistry	Reno
Belz, Frank J.	German	Reno
Bender, Homer Charles	Mathematics	Reno
Black, Fred D.	Mines	Virginia City
Bray, Mrs. J. E.	Domestic Arts and Science	Reno
Brown, C. L.	Chemistry	Reno
Bull, Chas. Edward	Liberal Arts	Reno
Burge, Edith	Domestic Arts and Science	Winnemucca
Carter, Arthur	Mines	Reno
Doyle, Hazel F.	French	Reno
Drake, Frank	Chemistry	Tuscarora
Dunaway, Myrtis J.	Domestic Arts	Osawatomie, Kans.
Elliott, Leslie E.	Mines	Bridgeport, Cal.
Gulling, Rose Allene	Domestic Arts and Science	Reno
Helzer, Ott Fleming	Mines	Reno
Holmes, Phemie J.	Commercial	Reno
Jacobs, Mrs. J. Otis	Domestic Arts and Science	Reno
Kennedy, Mrs. P. B.	Domestic Arts and Science	Reno
Ladd, Lydia	Stenography	Lovelock
Langhorst, H. J.	Mines	Cromberg, Cal.
Lawrence, William C.	Mines	Greenville, Cal.
Meeker, Dan Walter	Commercial	Charlotte, Mich.
Nadon, Josephine	Domestic Arts and Science	Reno
Nixon, Mrs. E. J.	French	Reno
Nolan, Mrs. G. E.	French	Reno
North, Angellina	Commercial	Reno
Palmer, Harry Stanley	Mines	Reno
Pike, Cleve	Commercial	Reno
Quong, George Byron	English, Spanish	Carson City
Reed, Mabel Lucy	Domestic Arts and Science	Lovelock
Sciocchetti, Luis	English, Sociology	Reno
Shambeau, Mrs. Edith	Domestic Arts and Science	Reno
Shier, Laura	Domestic Arts and Science	Delamar
Skinner, Lloyd D.	Mechanical Engineering	Reward, Cal.
Sparks, Charles Meigs	General Science	Reno
Steckle, Ivan X.	Liberal Arts	Freeport, Mich.
Stewart, Grace N.	Commercial	Fish Lake
Thyes, Edna	Domestic Arts and Science	Reno
Williams, Mrs. H. L.	Domestic Arts and Science	Reno
Wilson, Harry A.	Mechanic Arts	Reno
Wright, W. E.	Mines	Reno

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Juniors	17	
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Freshmen	15	
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Seniors	11	
Juniors	10	
Sophomores	11	
Freshmen	12	
		44
<i>School of General Science—</i>		
Seniors	1	
Juniors	2	
Sophomores	0	
Freshmen	3	
		6
<i>School of Mechanical Engineering—</i>		
Seniors	3	
Juniors	3	
Sophomores	10	
Freshmen	10	
		26
<i>School of Civil Engineering—</i>		
Seniors	0	
Juniors	3	
Sophomores	1	
Freshmen	3	
		7
<i>School of Commerce—</i>		
Seniors	1	
Juniors	0	
Sophomores	0	
Freshmen	0	
		1
<i>School of Agriculture—</i>		
Seniors	0	
Juniors	0	
Sophomores	1	
Freshmen	0	
		1
<i>Normal School—</i>		
Seniors	9	
Second year	3	
First year	1	
		13
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Carried forward		150

Enrollment.

131

Brought forward..... 150

UNIVERSITY HIGH SCHOOL.

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257

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